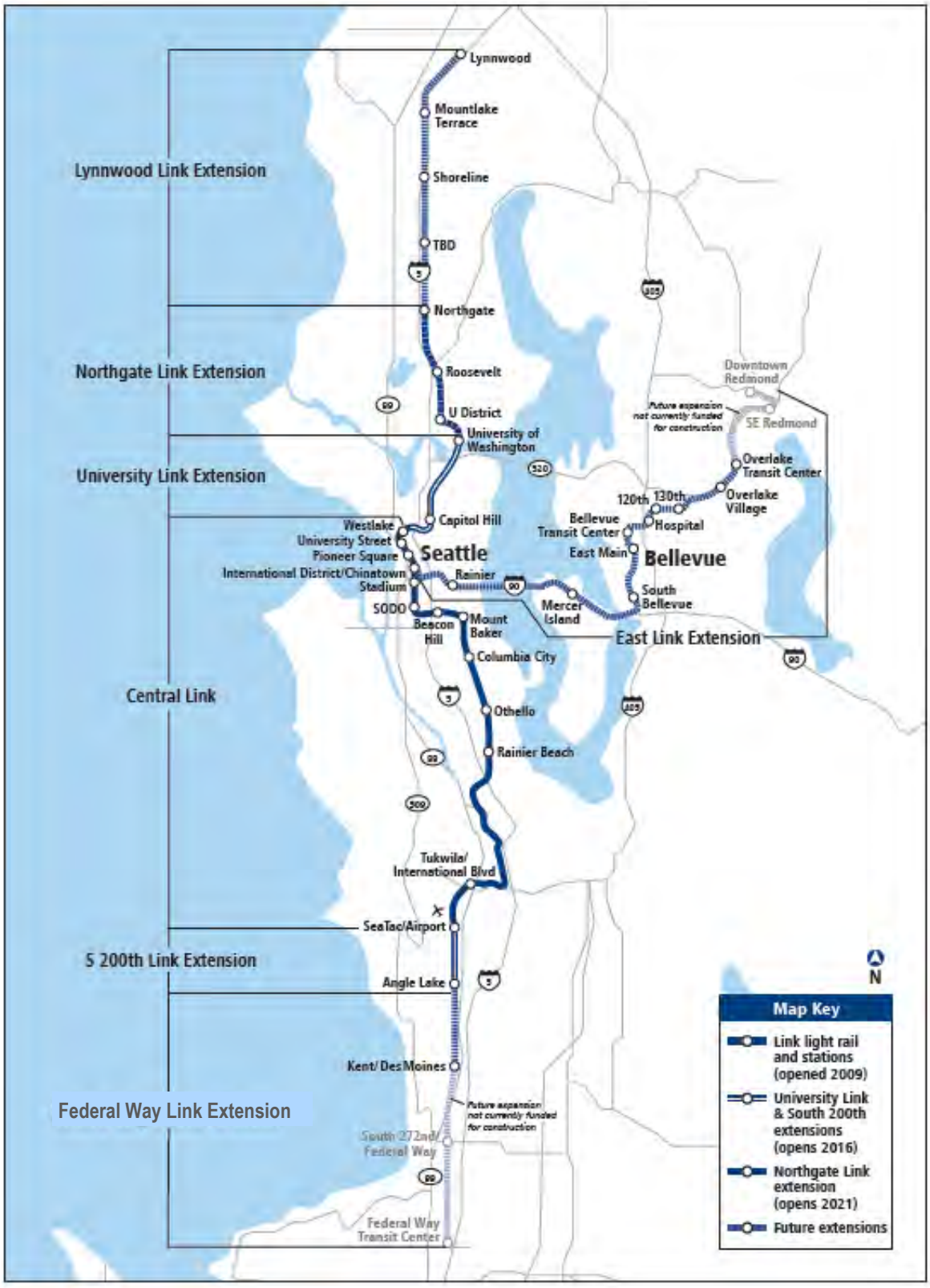
# Progress Report
# Link Light Rail Program

**At the Maple Leaf Portal, crew is completing assembly of TBM No. 2 for launch.**

## September | 2014

SOUNDTRANSIT




*Map of Sound Transit's current and future light rail projects.*

## Projects

**University Link Extension:** The University Link Extension work program with $1.76 billion capital budget was approved by the Board in July 2008. The 3.15-mile light rail segment is located entirely underground with tunnels traveling from Pine Street, under the I-5 freeway to an underground station at Capitol Hill, continuing north beneath SR 520 and the Lake Washington Ship Canal to an underground station on the University of Washington campus, near Husky Stadium.

**Northgate Link Extension:** The University of Washington Station (UWS) to Northgate project is a 4.3-mile extension of light rail from the UWS north under campus via twin-bored tunnels to an underground station at NE 45th Street continuing to an underground station at NE 65th Street and via tunnel, retained cut and elevated sections to Northgate. The project is in Final Design and Construction. Revenue Service date is September 2021.

**Lynnwood Link Extension:** This project entails the planning, design and construction of an extension of Northgate Link from Northgate to Lynnwood in Snohomish County with additional service in the cities of Shoreline and Mountlake Terrace. The draft environmental impact statement (DEIS) was published in July 2013.

**East Link Extension:** East Link Extension expands light rail to East King County via I-90 from Downtown Seattle to the Overlake Transit Center area of Redmond, with stations serving Rainier Avenue/I-90, Mercer Island, South Bellevue, Downtown Bellevue, Overlake Hospital, the Bel-Red corridor, Overlake Village and the Overlake Transit Center. Revenue service to the Overlake Transit Center is forecast for early 2023 with a tunnel route in Downtown Bellevue.

**Initial Segment**: Completed 13.9-mile light rail line between downtown Seattle and South 154th Street in the City of Tukwila. Revenue service began on July 18, 2009.

**Airport Link**: Completed 1.7-mile extension of the Initial Segment to Sea-Tac International Airport. Revenue service began on December 19, 2009.

**South 200th Link Extension:** S. 200th Link Extension consists of a 1.6-mile extension of the light rail from the SeaTac/Airport Station to an elevated station at South 200th Street. The Project is being developed through a design-build (DB) delivery strategy and the anticipated service launch is September 2016.

**Federal Way Link Extension:** Sound Transit has initiated studies to identify and evaluate routing and station location requirements to inform conceptual engineering and environmental review for the extension of light rail to the Federal Way Transit Center; with preliminary engineering to be completed on the segment extending from S. 200$^{th}$ St. to Kent/Des Moines in the vicinity of Highline Community College. The proposed budget for this effort is $41.8M.

**Tacoma Link Expansion:** In partnership with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding Tacoma Link in the context of the City and Pierce Transit service and capital plans.

**Link Operations and Maintenance Satellite Facility:** Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion.

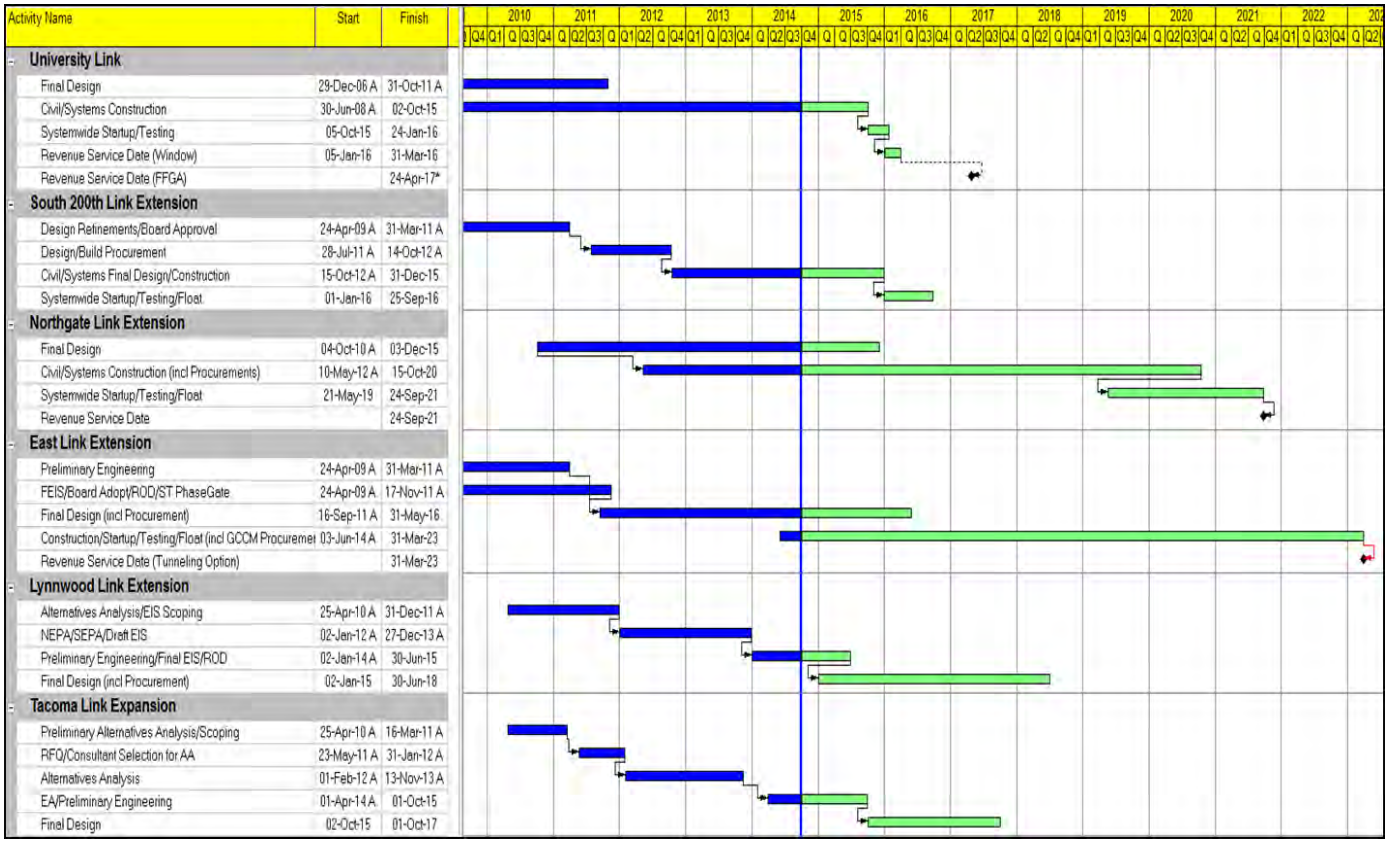
### Program Budget

| Project | Adopted Budget | Committed to Date | Incurred to Date |
|---|---|---|---|
| University Link[3] | $1,947.7 | $1,646.0 | $1,454.0 |
| Northgate Link Extension[2, 3] | $2,131.4 | $754.7 | $341.4 |
| Lynnwood Link Extension[1] | $57.1 | $43.0 | $34.0 |
| East Link[2] | $798.3 | $299.2 | $244.2 |
| Initial Segment[4] | $2,433.7 | $2,323.7 | $2,296.3 |
| Airport Link[4] | $261.6 | $261.3 | $260.8 |
| S. 200th Link Extension[3] | $383.2 | $297.1 | $168.2 |
| Federal Way Link Extension[1] | $42.0 | $14.4 | $11.1 |
| Tacoma Link Expansion [1,5] | $5.8 | $4.3 | $2.7 |
| Link Operations & Maintenance Satellite Facility[1] | $36.8 | $32.3 | $27.0 |
| **Total** | **$8,097.6** | **$5,676.0** | **$4,839.7** |

*Table figures in millions (1) Preliminary Engineering Phase; (2) Final Design Phase ; (3) Construction Phase; (4) In Service, (5) Updated Quarterly.*

## Program Schedule

Schedules for active projects are summarized below.




*Changes this period: No changes this period.*

## Scope

**Limits**: 3.15-mile extension of the Initial Segment light rail transit (LRT) system from the Pine Street Stub Tunnel (PSST) in downtown Seattle to University of Washington (UW) campus near Husky Stadium.

**Tunnels:** Two twin bored tunnels. Two contract segments: U220 starts at Husky Stadium, continues beneath SR 520 and the Lake Washington Ship Canal and south to the Capitol Hill underground station. U230 commences at Capitol Hill Station and proceeds south under the I-5 freeway to the PSST.

**Stations**: 2 underground center platform stations – Capitol Hill (U240) and University of Washington (U250). U240 is approximately 65' underground with three station entrances. U250 is about 100' below ground, with three station entrances and connections to the UW campus by a pedestrian bridge.

**System**: 27 LRV; direct fixation tracks, signals, traction electrification, and SCADA communications

**Budget**: $1.948 billion including finance cost (capital subtotal of $1.756 billion)

**Schedule**: Project completion in the 1st QTR 2016

## Key Project Issues

- U830 Systems access will be a continuous issue as there are no tunnel portals in the U-Link project. All access coordination are crucial, especially the hoisting scope and requires collaboration between Civil and System contractors. Coordination between U250 and U830 is at a critical stage as U250 progresses towards substantial completion; hence, the need to close temporary openings while U830 still need the space for hoisting materials into the tunnel. Contractors are working on this issue through the project's Coordinated Installation Plans.
- *U830 Systems* - SCADA software development continues to be the highest risk critical path in Systems. Sound Transit continues to visit the Contractor's facilities to monitor and obtain status of subcontractors SCADA software development. Milestone #5 (MS 5)-Retrofitting of the SCADA system in the DSTT has slipped. ST accepted Contractor's mitigation plan and has created interim milestones to track and allow for space and time needed prior to Milestone #6, which is Substantial Completion. The interim milestone redefined MS 5 in MS 5 (Train Control DSTT) and new milestones 5A (Beacon Hill Cutover) and 5B (DSTT EVS/BMS & U-Link EVS Cutover). Collaboration with U240 contractor will be critical to achieve MS 5B.
- *U830 Systems*—Demolition of the demising wall in Pine Street Stub tunnel will connect the U-Link tunnels to existing Link tunnel operations. Coordination with all stakeholders is critical.
- *Early Opening:* Recommended to the Sound Transit Board continues to have probability to open for Revenue Service sometime during the 1st QTR 2016. All project float has been released and Testing and Start-Up Period compressed with the critical path running through U240 and U830—any impact or delay will be difficult to absorb as there is no more float. Coordination with regional stakeholders has begun through rail activation activities. Simulation for 6 minute headways with joint operations in DSTT was completed.

## Project Cost Summary

The U-Link project cost is summarized in two types of cost classifications. In the first table, cost is classified in accordance with Sound Transit's Work Breakdown Structure (WBS); and in the second table, cost is summarized in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions.)

| WBS Phase Elements | Baseline Budget | Current Adopted Budget | Commitment to Date* | Incurred to Date | Est. Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| ADMINISTRATION | $ 115.23 | $ 113.55 | $ 61.55 | $ 63.36 | $ 103.55 | $ 10.00 |
| PRELIMINARY ENGINEERING | $ 24.39 | $ 24.26 | $ 24.26 | $ 24.26 | $ 24.26 | $ - |
| FINAL DESIGN | $ 77.94 | $ 89.31 | $ 84.70 | $ 81.37 | $ 89.31 | $ (0.00) |
| CONSTRUCTION SERVICES | $ 68.53 | $ 95.81 | $ 83.69 | $ 69.71 | $ 93.80 | $ 2.01 |
| 3rd PARTY AGREEMENTS | $ 18.65 | $ 18.65 | $ 11.42 | $ 10.65 | $ 17.77 | $ 0.88 |
| CONSTRUCTION | $ 1,180.00 | $ 1,158.18 | $ 963.87 | $ 856.73 | $ 1,047.67 | $ 110.51 |
| VEHICLES | $ 103.91 | $ 103.91 | $ 99.20 | $ 99.18 | $ 101.91 | $ 2.00 |
| ROW | $ 167.33 | $ 152.33 | $ 125.63 | $ 125.59 | $ 127.29 | $ 25.04 |
| **Capital Total** | **$ 1,755.97** | **$ 1,756.01** | **$ 1,454.33** | **$ 1,330.85** | **$ 1,605.56** | **$ 150.45** |
| FINANCE COST | $ 191.71 | $ 191.71 | $ 191.71 | $ 123.19 | $ 191.71 | $ - |
| **Project Total** | **$ 1,947.68** | **$ 1,947.72** | **$ 1,646.03** | **$ 1,454.04** | **$ 1,797.26** | **$ 150.45** |

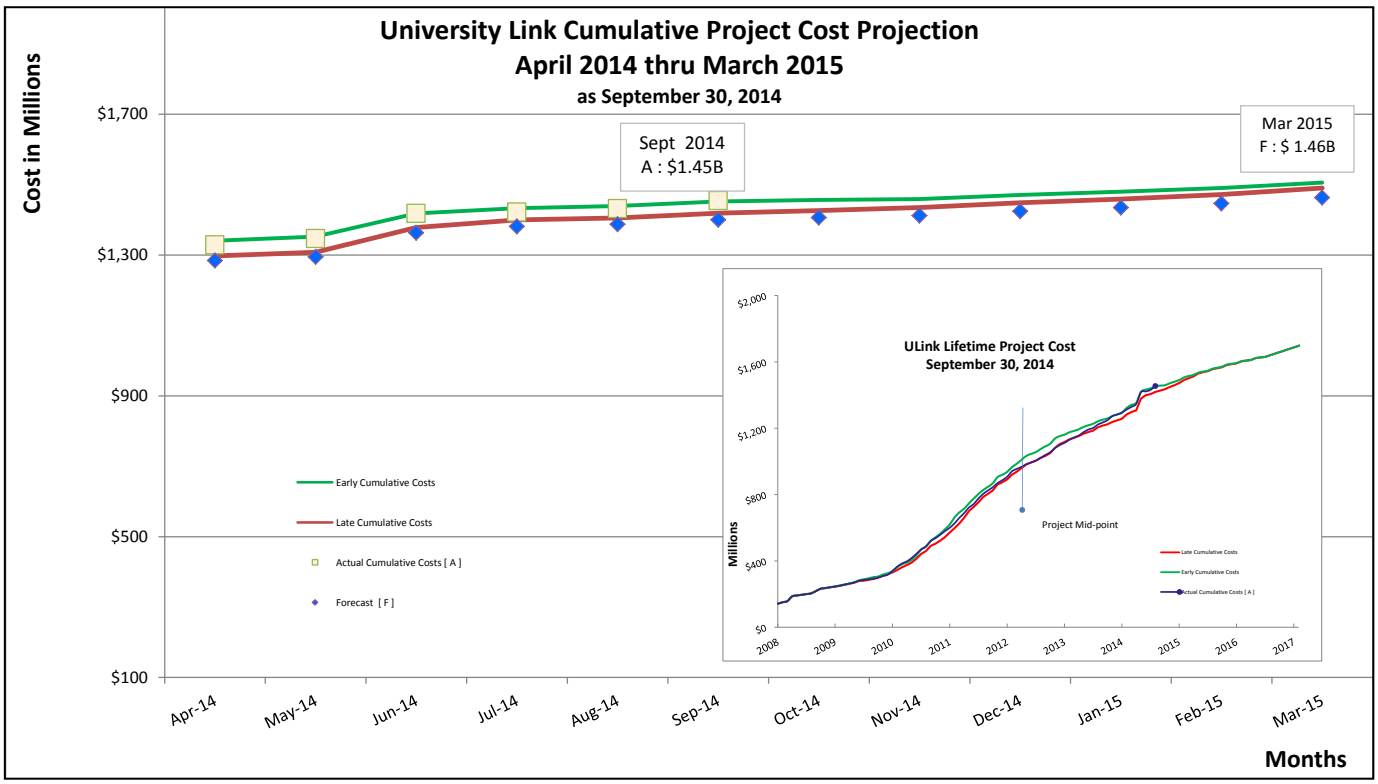
*(*)Totals may not equal column sums due to rounding of line entries.*

The September 2014's projected Estimated Final Cost (EFC) including Finance Cost continues to be about $1.8B. During this period, approximately $14.5M was incurred, increasing the project Incurred to Date amount to over $1.3B (Finance Cost excluded). Direct construction cost accounted for about 86% of the cost incurred in September at $12.4M essentially split 3 ways between Trackwork, Systems and Station Finishes. The direct construction EFC trends approximately $1B. This trend continues to be intact as both the high risk tunnel scope are now completed. The Capitol Hill Station (U240) Contractor continues concrete placement and mechanical/electrical work, UW Station (U250) continues on mechanical/electrical work and commissioning activities and the Systems (U830) Contractor continues track installation, Signals and SCADA development. The Total Incurred to Date for the Construction Phase is nearly $857M with a current commitments approaching $964M. Cost for LRV is approximately $99.2M and continues to be working on some warranty issue that may require some repairs.

Construction EFC under the SCC format for this period remains stable and relatively unchanged at about $1B. Construction phase expenditures in September is approximately $12.4M. This period, U-Link construction cost is attributed almost equally to Trackwork, Systems and Stations. U240 station continues to place concrete, mechanical and electrical work and U250 station is inching closer towards completion with increasing focus towards commissioning and substantial completion in 4th QTR 2015. All trackwork are tracking on schedule towards completion in 4th QTR 2015.

| Project Elements by SCC | Baseline Budget | Current Adopted Budget | Commitment to Date* | Incurred to Date | Estimated Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| | | | | | | |
| 10 Guideway & Track Elements | $ 626.83 | $ 407.16 | $ 456.09 | $ 448.34 | $ 462.41 | $ (55.25) |
| 20 Stations | $ 366.33 | $ 348.75 | $ 333.45 | $ 300.38 | $ 352.25 | $ (3.50) |
| 30 Support Facilities: Yards, Shops | $ 7.01 | $ 23.83 | $ 20.25 | $ 8.69 | $ 23.83 | $ - |
| 40 Sitework & Special Conditions | $ 59.03 | $ 110.29 | $ 54.06 | $ 47.80 | $ 58.31 | $ 51.98 |
| 50 Systems | $ 69.63 | $ 113.92 | $ 95.77 | $ 48.90 | $ 107.12 | $ 6.80 |
| **Construction Subtotal (SCC 10-50)** | **$ 1,128.82** | **$ 1,003.95** | **$ 959.62** | **$ 854.12** | **$ 1,003.91** | **$ 0.04** |
| 60 Row, Land, Existing Improvements | $ 167.33 | $ 125.77 | $ 125.63 | $ 125.59 | $ 125.77 | $ - |
| 70 Vehicles | $ 99.76 | $ 99.76 | $ 99.20 | $ 99.18 | $ 99.76 | $ - |
| 80 Professional Services | $ 306.41 | $ 338.49 | $ 269.87 | $ 251.96 | $ 341.08 | $ (2.59) |
| 90 Unallocated Contingency | $ 53.65 | $ 188.04 | $ - | $ - | $ 35.03 | $ 153.00 |
| **Capital Cost Total (SCC 10-90)** | **$ 1,755.97** | **$ 1,756.01** | **$ 1,454.33** | **$ 1,330.85** | **$ 1,605.56** | **$ 150.45** |
| 100 Finance Cost | $ 191.71 | $ 191.71 | $ 191.71 | $ 123.19 | $ 191.71 | $ - |
| **Project Total** | **$ 1,947.68** | **$ 1,947.72** | **$ 1,646.03** | **$ 1,454.04** | **$ 1,797.26** | **$ 150.45** |

*(*)Totals may not equal column sums due to rounding of line entries.*




Incurred to date for Construction under the SCC about $854M or about 85% of the budgeted construction scoped to date. Total capital cost incurred to date including non-construction cost (SCC 60 thru 90) is over $1.3B or about 76% of total project budget scoped (excluding Finance Cost).

Total cost incurred at the end of September 2014 including Finance Cost is about $1.45B. The project financing cost incurred to date is $123.2M with an annual projection of $30M to incur in 2014. The next finance cost update will be for the 4rd QTR 2014. Overall, University Link cost to date is projected to be approximately $1.46B by December 2014.

The EFC for project Finance Cost continues to be projected at $191.7 million. This cost represents booked financing cost and is generated based on allocation of appropriate level of financing cost to each capital project at Sound Transit. Despite an earlier than anticipated release of $44 million of the FFGA funds due to the American Recovery Reinvestment Act that was used to pay down finance charges, it is premature to project any savings at this time.

## Overall Construction Progress Summary

9/31/2014

| | |
|---|---|
| **Early Works** | |
| U210 Early Utility Work | 100% |
| U211 Demo & Remediation | 100% |
| U215 I-5 Undercrossing | 100% |
| **Tunnels** | |
| U220 UWS to CHS | 100% |
| U230 CHS to PSST | 100% |
| **Stations** | |
| U240 Capitol Hill Station | 73.5% |
| U250 University of WA Station | 98.6% |
| **Systems** | |
| U820 Yard Expansion | 100% |
| U830 Systemwide & Trackworks | 58.0% |
| Other Systems Contracts | 35.0% |
| **Overall Major Construction** | 89.8% |

*Note: The overall construction progress above is based on a weighted combination of duration, schedule and cost % complete for individual construction contracts as compared to the overall U-Link construction contracts.*

## Cost Contingency Management

Project contingencies continue to remain at a healthy level of $286M due to the favorable construction bidding climate, ROW acquisition cost trends, diligent project risk management practices and excellent tunneling conditions. September's overall contingency remained at the same level as last period. Contingency level continues to trend well above the Planned Contingency Drawdown; the projected planned balance between the end of 2nd QTR 2014 and the end of 4th QTR 2014 ranges from $103M and $92M and the Contingency Buffer is now projected to at the minimum $100M from this point until project completion. The projected planned Reserved Contingency balance is now planned at $50M (see contingency curve at the bottom of page). Construction is now approaching 90% complete. Barring any catastrophic event, there is a high likelihood that this contingency trend will remain intact.

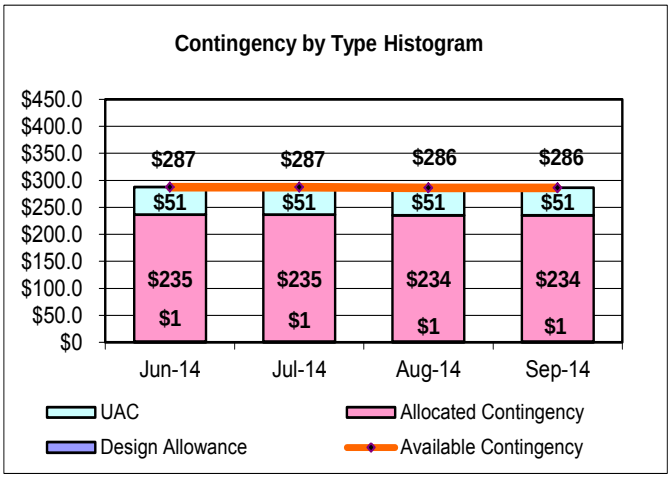
*Design Allowance:* The balance of design allowance has been reduced to $1.1M and is consistent with the project cycle as all the major design has been completed. The level of design allowance currently represents less than one-half percent of the total remaining scope in the project that has not been procured.

*Allocated Contingency:* Allocated Contingency continues to remain stable approximately $234M.

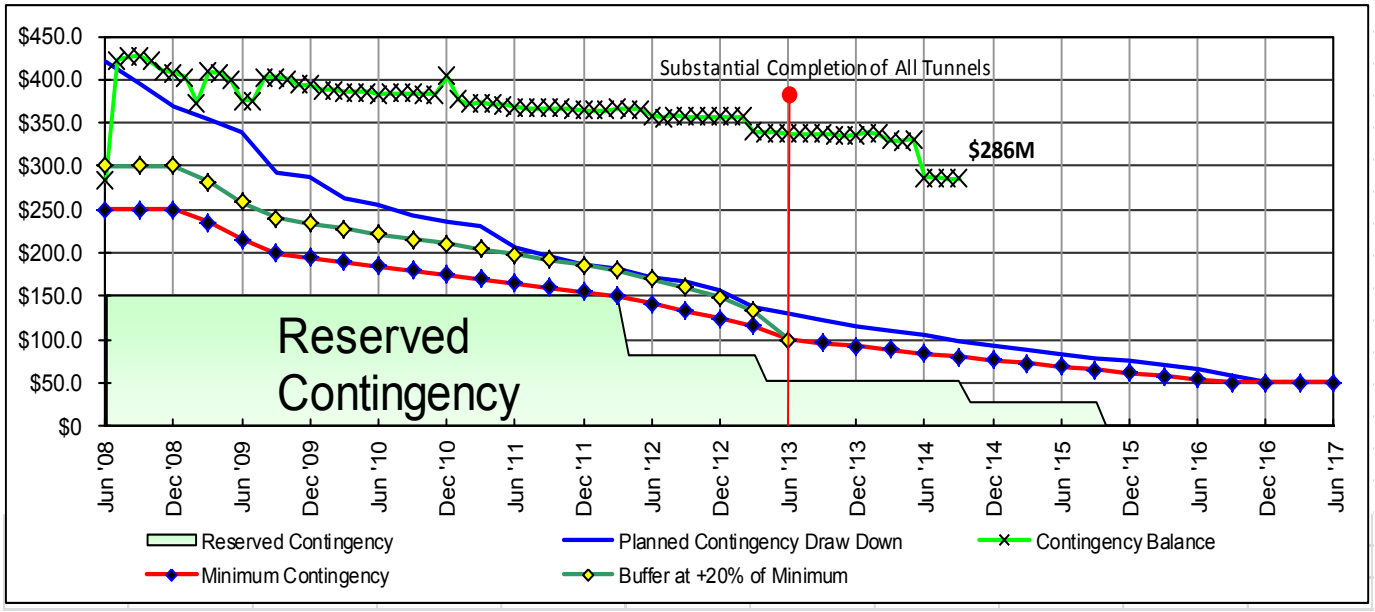
*Unallocated Contingency (UAC):* The total UAC balance is at $51M and continues to remain stable compared to the Baseline Cost Estimate amount of $53.7M considering that the construction is now approaching 89% complete.

| Contingency Status | BCE | | Current Status | |
|---|---|---|---|---|
| | Amount | % of Total | Remaining Amount | % Remaining Work |
| Design Allowance | $103.9 | 7.8% | $1.1 | 0.8% |
| Allocated Contingency | $264.3 | 19.8% | $233.9 | 168.2% |
| Unallocated Contingency | $53.7 | 4.0% | $51.0 | 36.7% |
| **Total:** | **$421.9** | **31.6%** | **$286.0** | **205.6%** |

Percentage = Contingency $ /(EFC or Remain. Work $ ex-Contingencies)




**MINIMUM CONTINGENCY CURVES** as of September 30, 2014 — $ in millions



## Risk Management

The University Link Risk Management Plan (RMP) established a risk management and oversight process for identifying, assessing, and monitoring risks and develop risk reduction/mitigation plans. On a quarterly basis, the risk register is reviewed and risks are updated to reflect condition at the end of the current quarter. The RMP is also executed in compliance to the Federal Transit Administration's (FTA) guidance laid out as part of FTA's Program Guidelines subtask 40E.

### Project Risk Overview:

At the end of the 2nd QTR 2014, U-Link project represents over 87% construction completion with U220 and U230 Tunnels at Acceptance; U240 Station is now over 64% complete as it reaches basic structure completion and excavation on the West Entry's pedestrian tunnel is well underway. U250 is over 94% completion, and is now focusing on the commencement of early commissioning items while completing the electrical and mechanical installation and the bicycle ramp. U830 Systems continued work on rail installation in the tunnels; commenced development of specialty track works; ongoing verification for communication and signaling elements. Communication work is somewhat behind and is being monitored closely. Sound Transit completed updating and identifying risks on the register that were both within the current management time horizon and posed considerable risk to project objectives by having both relatively high probability and impact. The report will be issued shortly to FTA and the PMOC. Prior to this update, the register contained a total of 580 risks, of which 110 were active (469 closed). This quarterly update resulted in a total of 586 risks, of which 103 are active (482 closed). Closed risks were those that no longer presents a potential impact, e.g., risks associated with surface and tunnel excavation at the stations and design risks that have been resolved since the last update. The rise in active risks this quarter is due to risk events in Systems scope as well as placeholder risk identified in the commencement of Rail Activation phase as U- Link is targeting an earlier than anticipated Revenue Service date in the 1st QTR 2016.

The top remaining risk subjects that will require at least partial mitigating action in the upcoming quarter are provided below along with their planned risk management strategies:

- **Civil to Systems Contract Interfaces**
  Risk subjects pertaining to the transitioning interface between Station Finishes contractors (U240 and U250) to Systems contractor (U830)

- **Systems Long Lead Items**
  Long lead specialty materials that are necessary to complete for timely installation of track and signaling scope; Floating Slab design and fabrication.

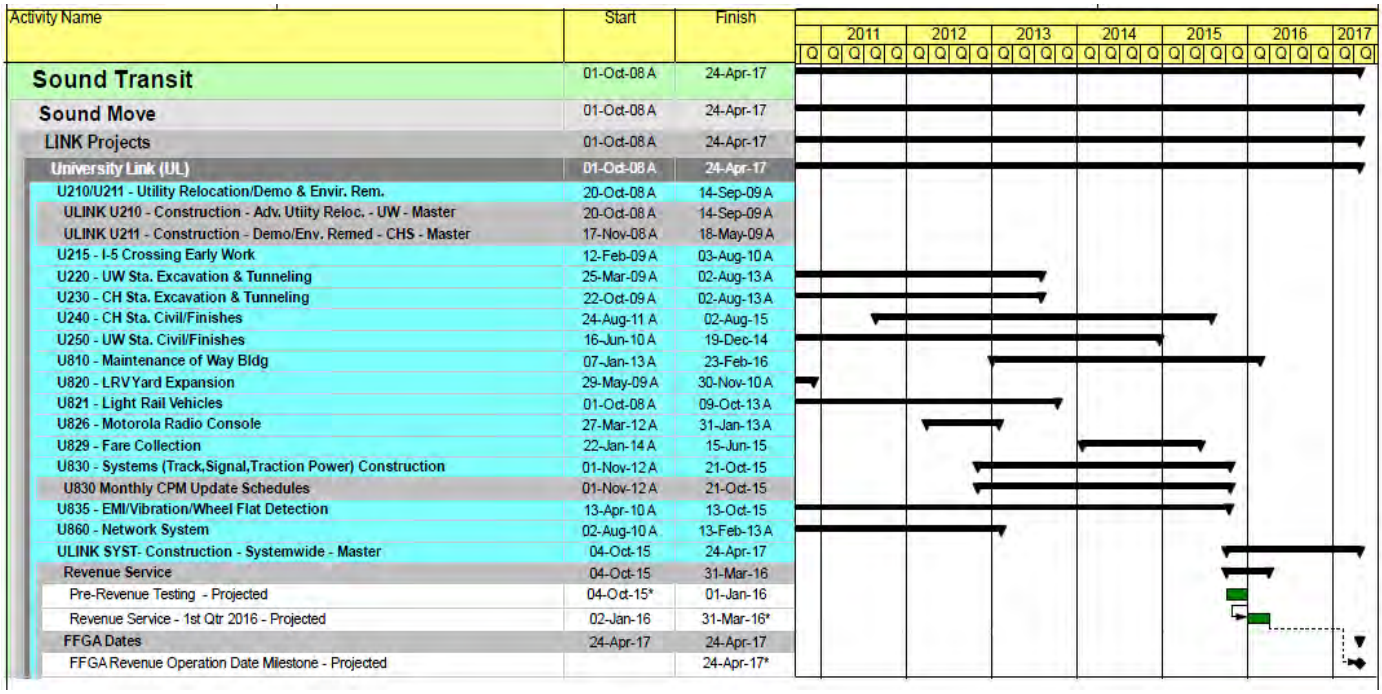
- **Systems Software Development**
  Development of the software systems to operate U-Link and the integration of the current operating system

- **Systems Final Design, Installation, and Testing (U830, U835, System-wide Testing)**
  All phases U-Link systems integration between the cut over of the current operating systems through to the commissioning and occupancy of the U-Link program

- **Rail Activation**
  As the project moves closer towards the transition from construction to rail activation, identification new risks and its potential to impact cost and schedule needs to be more visible.

## Project Schedule Summary

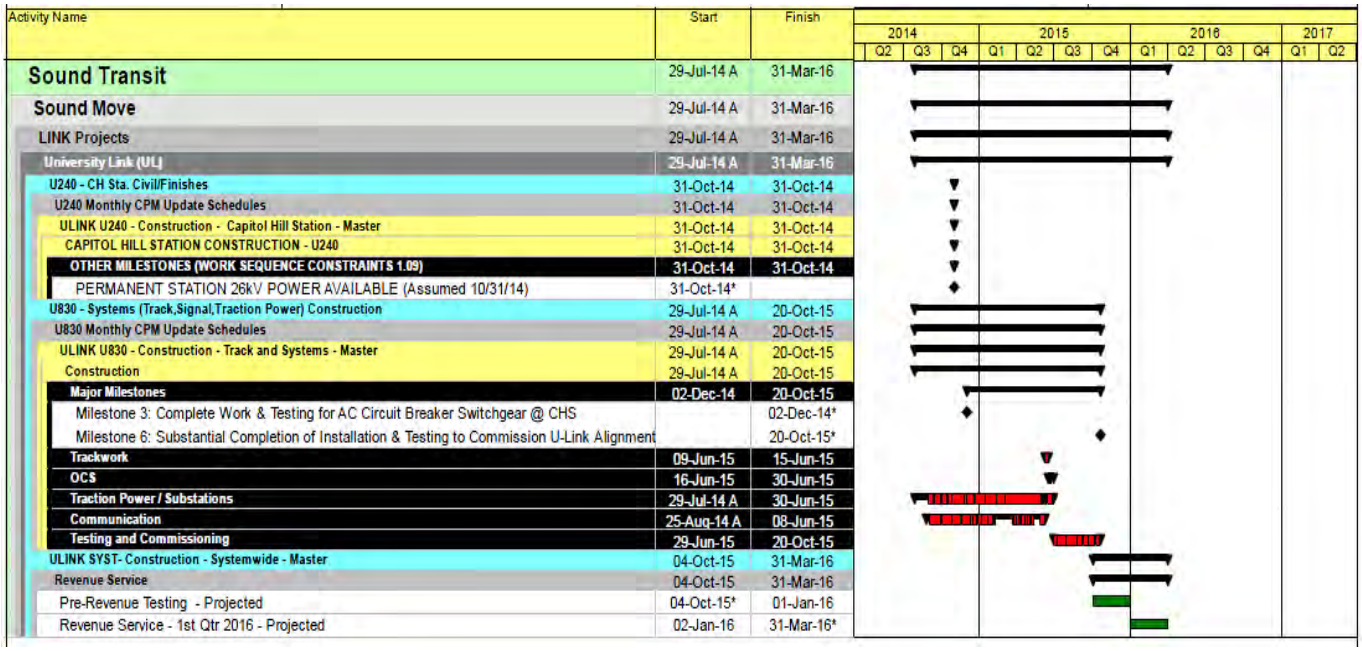
The University Link schedule is provided below. The U210, U211 and U215 early work contracts have been completed. The U820 LRV Storage Yard Expansion Contractor has also completed all work. The U220 and U230 TBM mining is complete. At U250 UW Station, the U830 Systems Contractor is on site to install rail and plinth in the station and tunnels. The U250 final roof pour has been completed at the crossover area. The U250 Contractor has demobilized from the Montlake Triangle. The U240 Capitol Hill Station Finishes Contractor has completed all major concrete pours at the roof level. The U830 Contractor has completed rail installation minus the crossover at the UW station. U835 EMI/Vibration design is underway. All U860 Fiber Retrofit, upgrades and fiber installation have been completed. A U810 MOW contract has been awarded and a baseline schedule is expected in early 3rd QTR 2014. The targeted revenue service window is now the 1st QTR 2016 with the removal of 169 days of float contingency from the Master Schedule.



| Activity Name | Start | Finish |
|---|---|---|
| Sound Transit | 01-Oct-08 A | 24-Apr-17 |
| Sound Move | 01-Oct-08 A | 24-Apr-17 |
| LINK Projects | 01-Oct-08 A | 24-Apr-17 |
| University Link (UL) | 01-Oct-08 A | 24-Apr-17 |
| U210/U211 - Utility Relocation/Demo & Envir. Rem. | 20-Oct-08 A | 14-Sep-09 A |
| ULINK U210 - Construction - Adv. Utiity Reloc. - UW - Master | 20-Oct-08 A | 14-Sep-09 A |
| ULINK U211 - Construction - Demo/Env. Remed - CHS - Master | 17-Nov-08 A | 18-May-09 A |
| U215 - I-5 Crossing Early Work | 12-Feb-09 A | 03-Aug-10 A |
| U220 - UW Sta. Excavation & Tunneling | 25-Mar-09 A | 02-Aug-13 A |
| U230 - CH Sta. Excavation & Tunneling | 22-Oct-09 A | 02-Aug-13 A |
| U240 - CH Sta. Civil/Finishes | 24-Aug-11 A | 02-Aug-15 |
| U250 - UW Sta. Civil/Finishes | 16-Jun-10 A | 19-Dec-14 |
| U810 - Maintenance of Way Bldg | 07-Jan-13 A | 23-Feb-16 |
| U820 - LRV Yard Expansion | 29-May-09 A | 30-Nov-10 A |
| U821 - Light Rail Vehicles | 01-Oct-08 A | 09-Oct-13 A |
| U826 - Motorola Radio Console | 27-Mar-12 A | 31-Jan-13 A |
| U829 - Fare Collection | 22-Jan-14 A | 15-Jun-15 |
| U830 - Systems (Track,Signal,Traction Power) Construction | 01-Nov-12 A | 21-Oct-15 |
| U830 Monthly CPM Update Schedules | 01-Nov-12 A | 21-Oct-15 |
| U835 - EMI/Vibration/Wheel Flat Detection | 13-Apr-10 A | 13-Oct-15 |
| U860 - Network System | 02-Aug-10 A | 13-Feb-13 A |
| ULINK SYST- Construction - Systemwide - Master | 04-Oct-15 | 24-Apr-17 |
| Revenue Service | 04-Oct-15 | 31-Mar-16 |
| Pre-Revenue Testing - Projected | 04-Oct-15* | 01-Jan-16 |
| Revenue Service - 1st Qtr 2016 - Projected | 02-Jan-16 | 31-Mar-16* |
| FFGA Dates | 24-Apr-17 | 24-Apr-17 |
| FFGA Revenue Operation Date Milestone - Projected | | 24-Apr-17* |

## Progress and Critical Path Analysis

The U-Link master schedule update contains the tunnel contractors' schedules and interfaces with the stations and U830 (Track, Signal, Traction power and Communications System) schedules. TBM Mining, U220 and U230, have achieved Substantial Completion and U830 has completed rail charging at the UW Station and now CHS Station. Plinth rail installation is complete in the NB and SB tunnel between CHS and PSST. Sound Transit is tracking multiple critical paths through the project as U-Link nears completion in early 2016. The critical path is progressing through U240 CHS Systems Rooms access and the handover of these rooms to U830 for equipment installation and testing and commissioning. It is expected that the room access date may be less of a factor as the Coordinated Installation Program progresses between U240 and U830. U830's Initial Segment SCADA retrofit activities are closely being monitored at this time due to it's criticality to system-wide testing for the U-Link Extension.



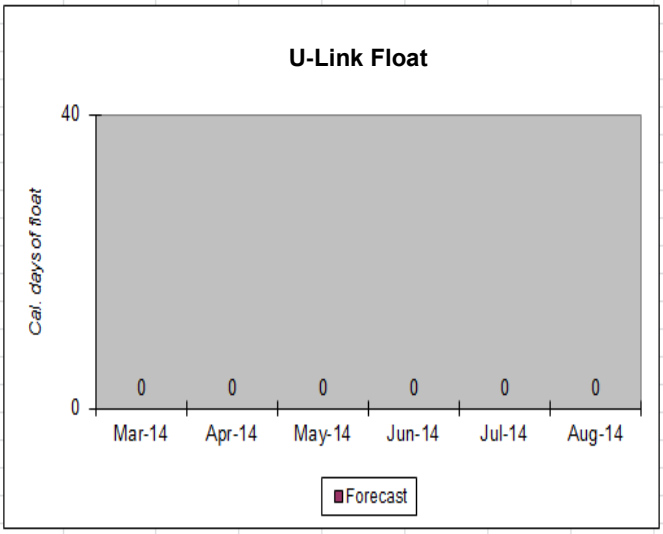
| Activity Name | Start | Finish |
|---|---|---|
| Sound Transit | 29-Jul-14 A | 31-Mar-16 |
| Sound Move | 29-Jul-14 A | 31-Mar-16 |
| LINK Projects | 29-Jul-14 A | 31-Mar-16 |
| University Link (UL) | 29-Jul-14 A | 31-Mar-16 |
| U240 - CH Sta. Civil/Finishes | 31-Oct-14 | 31-Oct-14 |
| U240 Monthly CPM Update Schedules | 31-Oct-14 | 31-Oct-14 |
| ULINK U240 - Construction - Capitol Hill Station - Master | 31-Oct-14 | 31-Oct-14 |
| CAPITOL HILL STATION CONSTRUCTION - U240 | 31-Oct-14 | 31-Oct-14 |
| OTHER MILESTONES (WORK SEQUENCE CONSTRAINTS 1.09) | 31-Oct-14 | 31-Oct-14 |
| PERMANENT STATION 26kV POWER AVAILABLE (Assumed 10/31/14) | 31-Oct-14* | |
| U830 - Systems (Track,Signal,Traction Power) Construction | 29-Jul-14 A | 20-Oct-15 |
| U830 Monthly CPM Update Schedules | 29-Jul-14 A | 20-Oct-15 |
| ULINK U830 - Construction - Track and Systems - Master | 29-Jul-14 A | 20-Oct-15 |
| Construction | 29-Jul-14 A | 20-Oct-15 |
| Major Milestones | 02-Dec-14 | 20-Oct-15 |
| Milestone 3: Complete Work & Testing for AC Circuit Breaker Switchgear @ CHS | | 02-Dec-14* |
| Milestone 6: Substantial Completion of Installation & Testing to Commission U-Link Alignment | | 20-Oct-15* |
| Trackwork | 09-Jun-15 | 15-Jun-15 |
| OCS | 16-Jun-15 | 30-Jun-15 |
| Traction Power / Substations | 29-Jul-14 A | 30-Jun-15 |
| Communication | 25-Aug-14 A | 08-Jun-15 |
| Testing and Commissioning | 29-Jun-15 | 20-Oct-15 |
| ULINK SYST- Construction - Systemwide - Master | 04-Oct-15 | 31-Mar-16 |
| Revenue Service | 04-Oct-15 | 31-Mar-16 |
| Pre-Revenue Testing - Projected | 04-Oct-15* | 01-Jan-16 |
| Revenue Service - 1st Qtr 2016 - Projected | 02-Jan-16 | 31-Mar-16* |



## Critical Path Float

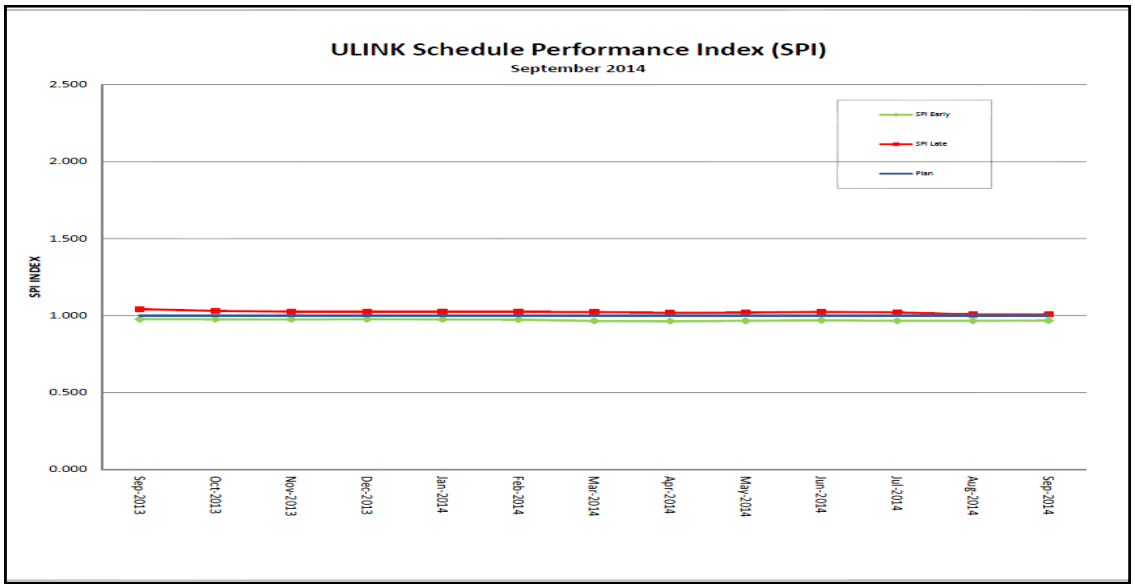
U-Link project float contingency has been removed from the U-Link Master Schedule and a window for Revenue Service has been reported for 1st QTR 2016.

No additional delays occurred this period. Progress will continue to be monitored closely.



## Schedule Performance Index

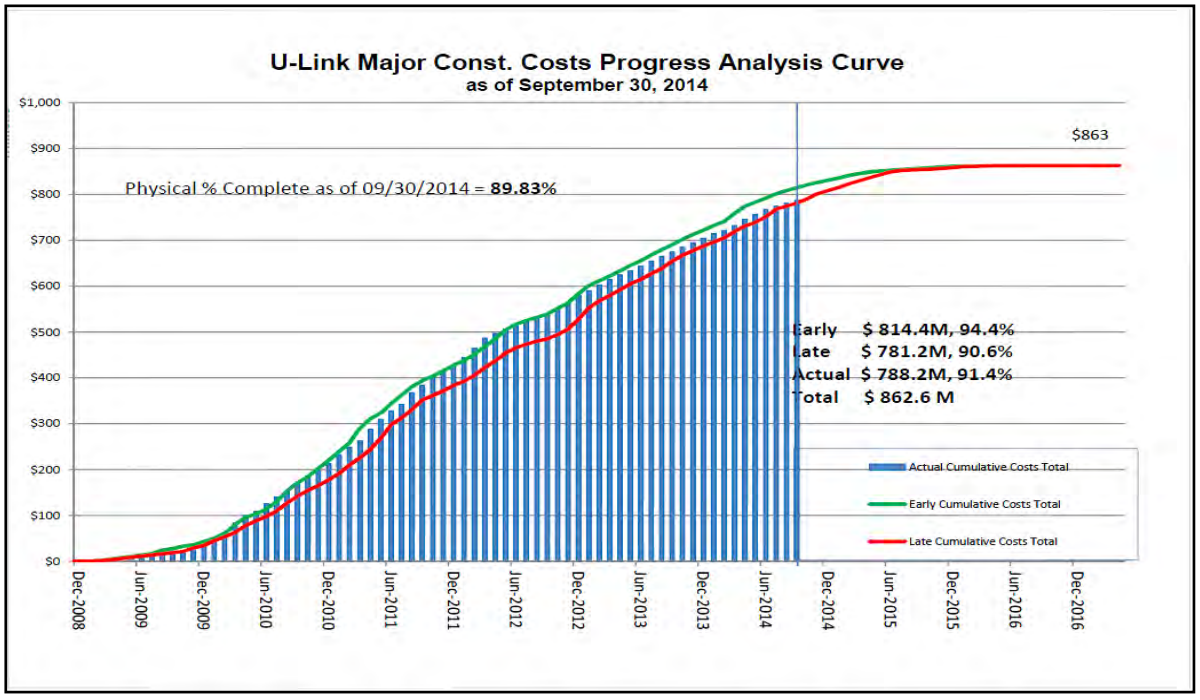
The Schedule Performance Index (SPI) for U-Link remains the same this period at 0.97 due to the aggressive baseline schedules provided by the U830 and U240 contractors and their inability to meet those expectations. (See details on individual contract sections.) Progress will continue to be monitored closely.




## Cost Progress Analysis

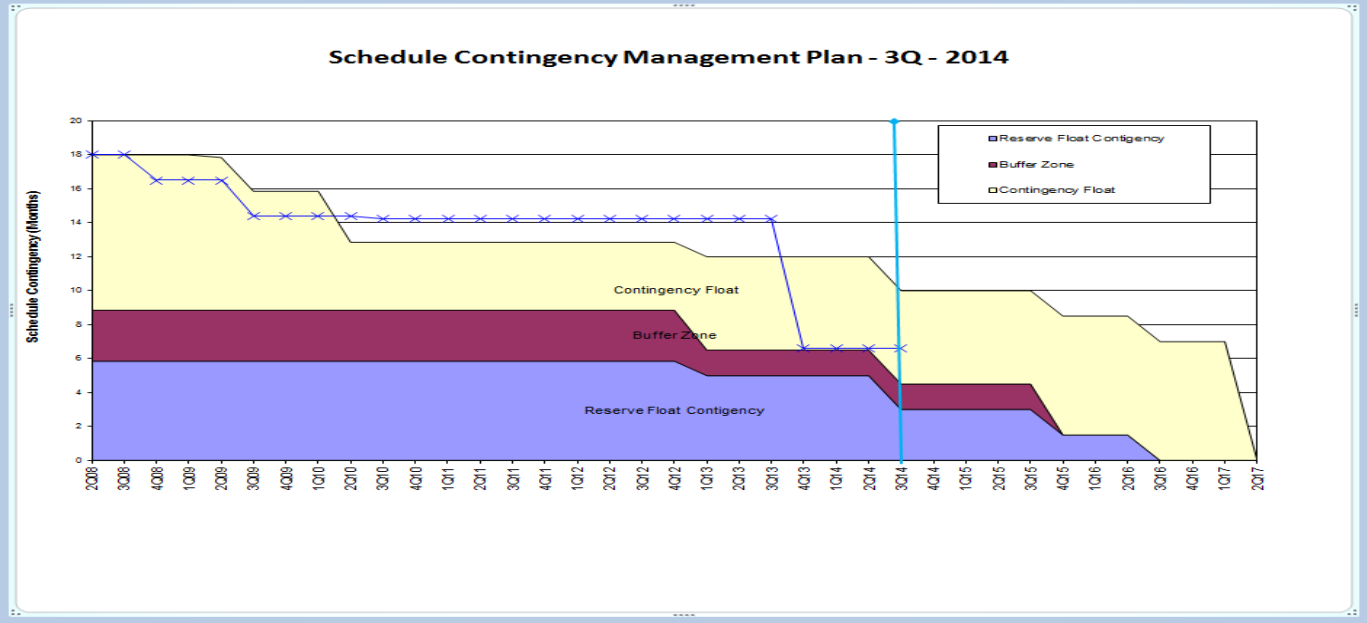
U220 and U230 are complete. U250 progress is now leveling off as final finishes and commissioning commence.

Overall U-Link physical % complete is at 89.8% against 82% of contract time expended. The graph below shows the progress of major construction contracts cost compared to the early/late projections.



## Schedule Contingency Management

The "Minimum Schedule Contingency Curves" were established in the Project Execution Plan (PEP). The PEP segregated Schedule Contingency into "Forced Lag," which is a built-in float on the Critical Path; "Buffer Float," which is the duration between Sound Transit's targeted Revenue Operation Date and the Schedule Revenue Operation Date; "Contingency Float," which is the duration between Sound Transit targeted Revenue Operation Date and the FFGA Revenue Operation Date, and "Desired Minimum Float" which is the amount of schedule float the FTA requires Sound Transit to maintain. The current schedule contingency balance was reduced by six months in November 2013. All contingency float was removed based on the completion of the tunneling contracts in the 3rd QTR 2013.




## Right-of-Way

The U-Link project involved the acquisition of a range of property interests, including fee takings for stations and staging areas, tunnel easements for the running tunnels, acquisitions from the University of Washington and airspace leases with the Washington Department of Transportation. These acquisitions required relocation of 141 owners and tenants. The right-of-way program status is summarized below.

| Line Section | Total Parcels Certified | Offers Made | Signed Agreements | Admin. Settlements | Possession and Use | Closings to date | Relocations Required | Relocations Completed |
|---|---|---|---|---|---|---|---|---|
| Capitol Hill Station | 19 | 19 | | | | 19 | 140 | 140 |
| Tunnel Easements | 223 | 222 | | | | 222 | 1 | 1 |
| **TOTAL** | 242 | 241 | | | | 241 | 141 | 141 |

Capitol Hill Station: The acquisitions and relocations for the station site are complete.

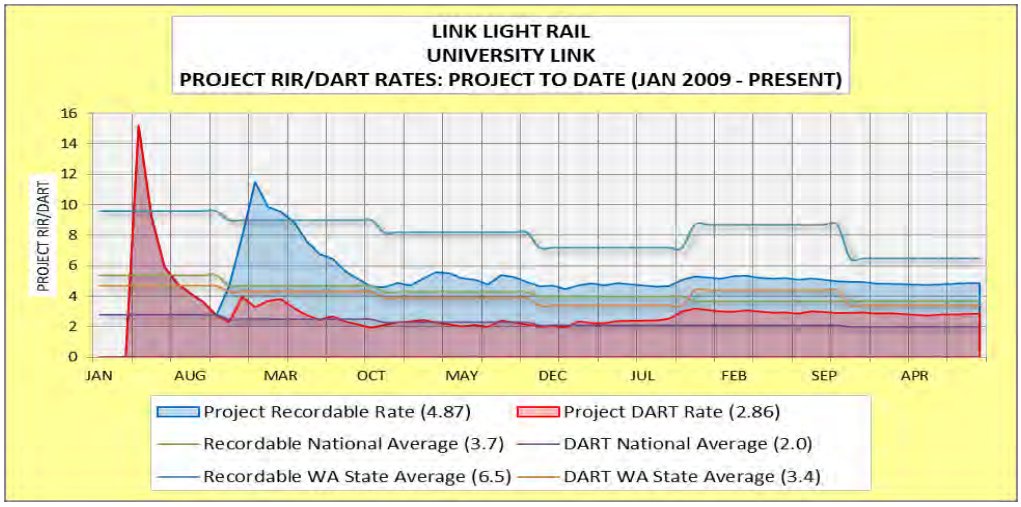
Tunnel Easements: All 222 parcels have closed. A WSDOT parcel continues to be in pending status; Sound Transit may not need this parcel for the project.

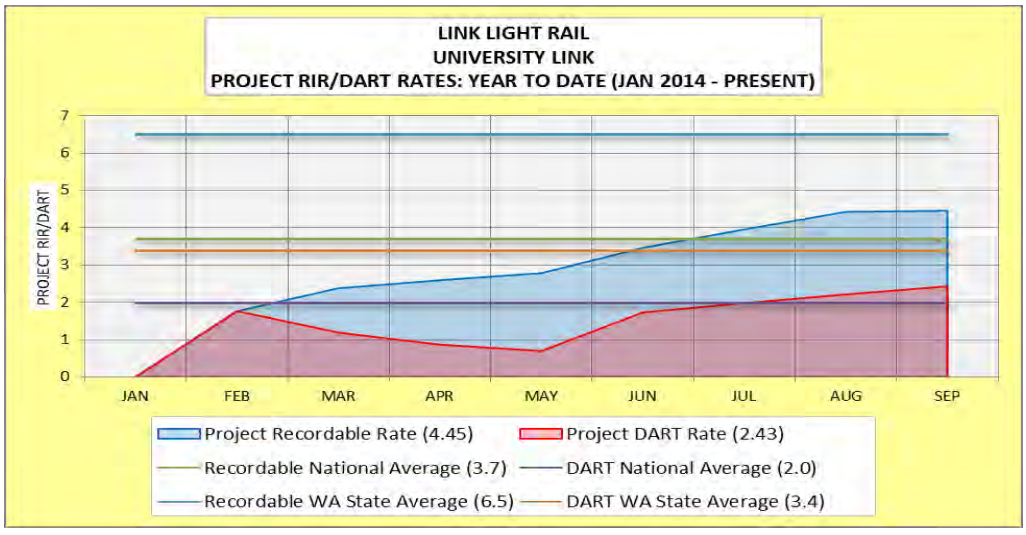
## Construction Safety

Safety statistics for the reporting period and year-to-date are summarized in the table and charts.

| Data/Measure | September 2014 | Year to Date | Project to Date |
|---|---|---|---|
| Recordable Injury/Illness Cases | 1 | 11 | 85 |
| Days Away From Work Cases | 0 | 2 | 17 |
| Total Days Away From Work | 30 | 68 | 641 |
| Restricted or Modified Work Cases | 1 | 4 | 33 |
| Total Days Restricted or Modified Work | 18 | 39 | 1520 |
| First Aid Cases | 0 | 16 | 142 |
| Reported Near Mishaps | 0 | 20 | 223 |
| Ave. Nos. of Employees on Worksite | 245 | - | - |
| Total # of Hours (GC & Subs) | **42,019** | **493,870** | **3,492,244** |
| **OSHA Incident Rates** | Monthly Average | Year to Date | Project to Date |
| Recordable Injury Rate | 4.76 | 4.45 | 4.87 |
| DART Rate | 4.76 | 2.43 | 2.86 |
| *Recordable National Average* | **3.70** | **3.70** | **3.70** |
| *DART National Average* | **2.00** | **2.00** | **2.00** |
| *Recordable WA State Average* | **6.50** | **6.50** | **6.50** |
| *DART WA State Average* | **3.40** | **3.40** | **3.40** |

The charts to the right show University Link's Recordable Injury Rates (*RIR*) and University Link's Days Away, Restricted or Modified (*DART*) Injury Rate as compared to the national average.



## Quality Assurance Activities

Activities

- U240: MRB Dispositioned: 1 RFD regarding substitute swaged serrated aluminum grating; 1 NCR ti Yse -AS-IS; regarding shotcrete partition walls with low 28 day compressive strength.
- U830: MRB Dispositioned 1 RFD regarding use of ASTM C685 for volumetric batching vs. batch plant for Heavyweight Concrete.

Issues

- U250: Level 1 Commissioning demo test failure.
- U250: Due to the open shaft at the pump control room, the Sump Pump control panels, and the UPS are exposed to water; duct is damaged and resulted in misalignment of the duct which needs replacement.

Summary

| Description | Sep 2014 | Notes |
|---|---|---|
| No. of Audits Planned | 0 | None |
| No. of Audits Completed | 0 | None |
| Reports in Progress | 0 | None |
| No. of Audits Postponed | 0 | None |

## Environmental

- Continued Environmental Oversight of construction.

## Sound Transit Board Actions

Board motions and resolutions directly related to University Link are summarized in the table below.

| Motion Number | Description | Date |
|---|---|---|
| | *None to report.* | |

## Community Outreach

- Sent construction alerts regarding temporary sidewalk closures to UW Station list.
- Met with residents and businesses on Nagle Place ahead of upcoming utility relocation work.

*Business Mitigation*

- Met with the owners of Annapurna Café to discuss the Broadway traffic switchover and worked on their banners and signage; prepared to extend promotion.
- Hosted a booth at the "Up Your Avenue" event in the U District.
- Held a meeting with Hilloween event planner to discuss logistics and project.

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## U220 Contract - *TBM Tunnel (UWS to CHS)*

### Current Progress

The U220 contract achieved Substantial Completion on June 7, 2013. Continued close-out activities.

### Close-out Activities

Current Period

- All NCR paperwork are now closed and Acceptance was issued in August 30, 2013.

Next Period

- Finalize remaining Change Orders to capture remaining Work Directive costs and de-commit unused Provisional Sums.

### Closely Monitored Issues

- No remaining issues.

### Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***U220 Contractor— Traylor Frontier-Kemper Joint Venture (TFK)*** | |
| Original Contract Value | $309,175,274 |
| Change Order Value | $12,067,459 |
| Current Contract Value | $ 321,408,334 |
| Total Actual Cost (Incurred to date) | $ 315,071,655 |
| Financial Percent Complete | 98% |
| Physical Percent Complete: | 100% |
| Authorized Contingency | $30,917,527 |
| Contingency Drawdown | $12,233,060 |
| Contingency Index* | 2.53 |

**Physical % complete / % contingency drawn down*

## U230 Contract -*TBM Tunnel (CHS to PSST)*

### Current Progress

Substantial Completion was achieved in March 2013. The Contractor completed the punchlist items and continued working on final documentation. Work is 100% complete.

### Close-out Activities

Current Period

- Contract is at Acceptance and is currently in the process of achieving Final Acceptance, which includes close out of contract.

Next Period

- Close out Activities: Continue working on achieving Final Acceptance. This includes reconciling of all outstanding monies and processing of final payment

### Closely Monitored Issues

- None to report.

### Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***U230 Contractor— JCM Joint Venture*** | |
| Original Contract Value | $153,556,000 |
| Change Order Value | $9,866,998 |
| Current Contract Value | $163,452,998 |
| Total Actual Cost (Incurred to date) | $156,979,939 |
| Financial Percent Complete | 96% |
| Physical Percent Complete | 100% |
| Authorized Contingency | $15,355,600 |
| Contingency Drawdown | $9,896,998 |
| Contingency Index* | 1.56 |

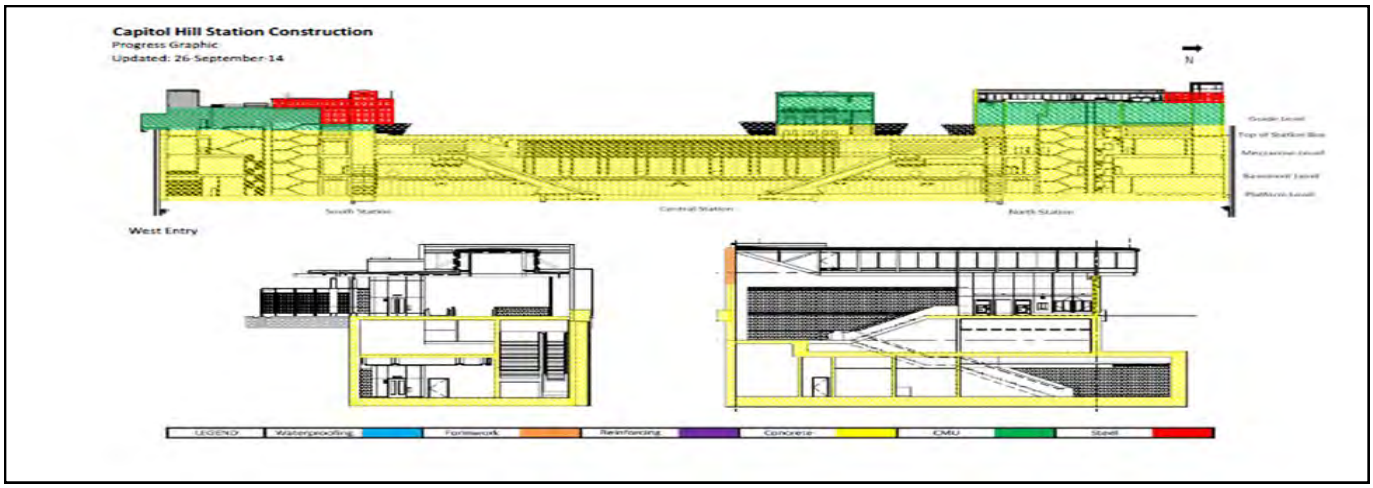
**Physical % complete / % contingency drawn down*

## U240 Contract – *Capitol Hill Station*

### Current Progress

West entry excavation is complete and interior walls are now being placed the switch to the eastern half of the pedestrian corridor is expected in October. Turnover of major systems rooms to U830 was completed this period. The tower crane has moved on to Northgate Link.

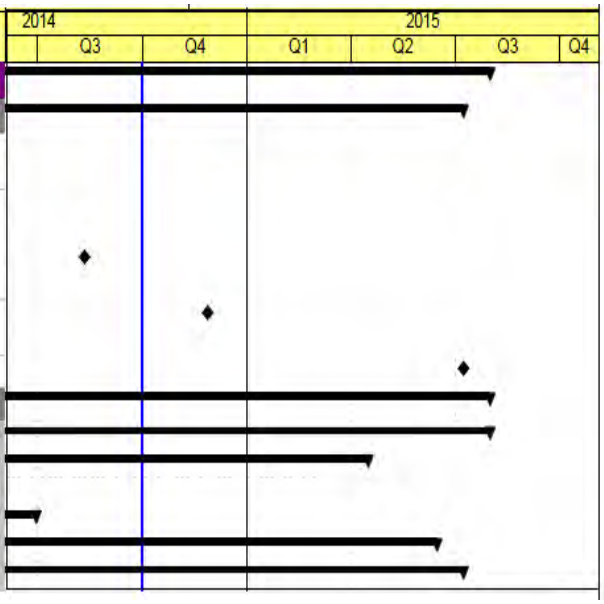
Physical % complete is at 74% against 69% contract time expended.




### Schedule/Critical Path

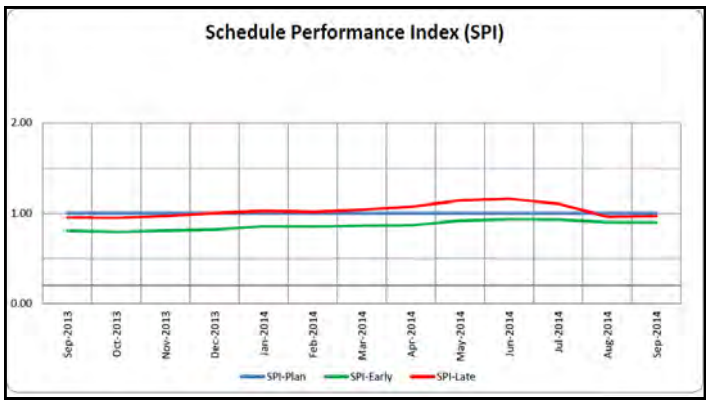
Milestone #3, Systems Room Access Complete was accomplished last period. The critical path this period will require some additional review with the Contractor. Commencement of Tunnel Ventilation Commissioning is dependent on U830 completing the switchgear earlier than the contract required so Level 2 commissioning can be completed by U240 for an early commencement of Level 3 commissioning of the Emergency Ventilation Fans by U830. The access constraints at Pine Street have been resolved with the CIP between U240 and U830 and U240 is expected to mobilize in October. Milestone #4, Substantial Completion, is reporting 25 days of float.

| Activity Name | Start | Finish |
|---|---|---|
| **ULINK U240 - Construction - Capitol Hill Station - Master** | 15-Nov-12 A | 31-Jul-15 |
| **CONTRACT MILESTONES (WORK SEQUENCE 1.08)-1** | 18-Apr-13 A | 08-Jul-15 |
| Milestone#1a Per Change Order#1 (Complete Base Slab)- 41 days after NTP to Area C | | 18-Apr-13 A |
| MILESTONE 2: BASIC CHS STRUCTURE COMPLETION (Finish On Or Before 2-APRIL-2014) | | 01-Apr-14 A |
| MILESTONE 3: ROOM ACCESS COMPLETION (Finish On Or Before 2-AUG-2014) | | 11-Aug-14 A |
| MILESTONE 1: PINE STREET Retreival SHAFT BELOW ELEV 130' (Finish On Or Before 06-Jan 2015) | | 26-Nov-14* |
| MILESTONE 4: SUBSTANTIAL COMPLETION (02-AUGUST-2015) | | 08-Jul-15* |
| **CAPITOL HILL STATION CONSTRUCTION - U240** | 15-Nov-12 A | 31-Jul-15 |
| MOBILIZATION-GENERAL CONDITIONS-PROJECT COORDINATION | 15-Nov-12 A | 31-Jul-15 |
| STRUCTURAL WORK | 15-Nov-12 A | 15-Apr-15 |
| LONG LEAD MECHANICAL EQUIPMENT | 25-Mar-13 A | 28-May-14 A |
| LONG LEAD ELECTRICAL EQUIPMENT | 27-Feb-13 A | 30-Jun-14 A |
| ARCHITECTURAL AND FINISHES | 28-May-13 A | 15-Jun-15 |
| COMMISSIONING | 08-Oct-13 A | 08-Jul-15 |



## Schedule Performance Index

The U240 Schedule Performance Index (SPI) is slightly below 1.00 this period, at 0.91. The U240 baseline schedule represented an aggressive schedule based on payment for materials and equipment procured but not yet installed. A review of the contract documents subsequent to the baseline schedule submittal indicated payment for these items can only occur once they are in place. The logic in the schedule has been adjusted since the baseline to recognize this payment process. Production levels and material procurement will continue to be monitored closely.




## Key Activities

Current Period

- Continued mortaring and grouting of CMU, while cleaning, power washing, and repairing any deficiencies at North and South Entries.
- Continued setting and welding steel frame components at the North Entry.
- Continued assembly of elevators, escalators & stairs.
- Continued to install electrical panels in electrical rooms and light fixtures in all rooms.
- Continued installing fire suppressant system at South and West entry, and continued to test fire pipes within the station.
- Installed all six soft starters for the smoke exhaust fans.
- At the West Entry, completed backfilling over the pedestrian concourse area.
- Contractor started drilling soldier piles for the east side of the pedestrian concourse.
- Continued installation of the SCL duct bank on Denny Way.

Next Period

- Continue assembly of elevators, escalators & stairs.
- Continue placing metal decking over stair #5 roof area and the upper North entry lobby roof.
- Complete installing hangers and ceiling grids on both the South and North ends of the station.
- Electrical and mechanical subcontractors will continue installing rough-in conduit and piping in the North & South basement, mezzanine, and grade level, wire pulling, and continue testing systems.
- Continue to place concrete walls at grade level and commence lower mezzanine level roof slab at the west entry.
- Switch over traffic from the East to the West side of Broadway to allow work to commence for East half of the pedestrian concourse work.
- Pine Street waterproofing and concrete work to start.

## Closely Monitored Issues

- Partition wall "inefficiencies" as outlined in RFC 96 have been discussed with Turner with no agreement reached. A meeting with ST upper management was held and ST to determine path to proceed.
- Cost for establishing a new milestone related to completion of Level 2 tunnel ventilation system testing was received and under review by ST.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***U240 Contractor - Turner Construction Co*** | |
| Original Contract Value | $104,850,276 |
| Change Order Value | $2,712,721 |
| Current Contract Value | $107,562,997 |
| Total Actual Cost (Incurred to date) | $76,284,018 |
| Financial Percent Complete: | 71% |
| Physical Percent Complete: | 74% |
| Authorized Contingency | $5,242,514 |
| Contingency Drawdown | $2,712,721 |
| Contingency Index | 1.37 |

*North Entry steel installation progress.*

## U250 Contract –*University of Washington Station*

### Current Progress

Milestone #4 (Basic Structure Completion) and Milestone #5 (All Systems Room Access) were completed in late January. Milestone #6 (Site Restoration) was completed in June. Montlake Triangle work continues as the bridge guardrail awaits fabrication. Ongoing coordination between U830 continues as systems electrical and communication equipment installation continues and U830 prepares the crossover area for rail installation. Permanent power installation is now complete. Commissioning is now well underway as the U250 completes sitework and finishes.

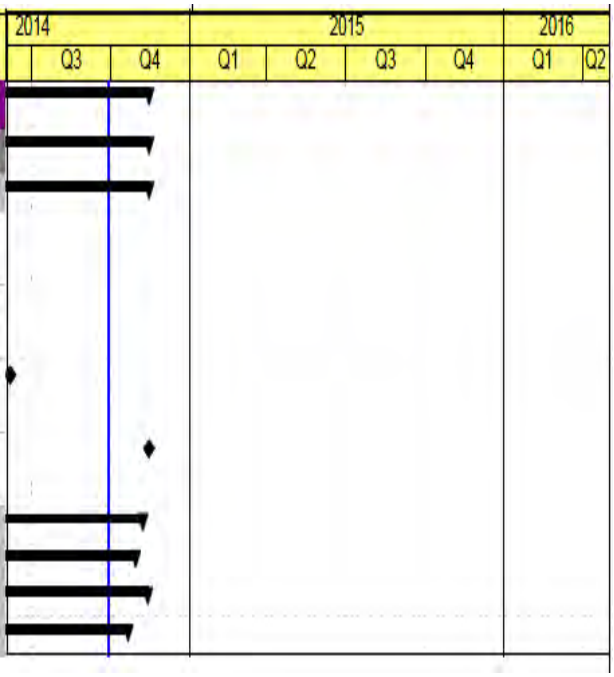
Work progress continued with approximately 98.6% physical completion against 97% contract time expended.

### Schedule/Critical Path

Milestone #1 (Basic Structure Completion), Milestone #3 (System Room Access), Milestone #4 (Basic Structure for all Station/Crossover), and Milestone #5 (all UWS Room Access) were completed. Milestone #6 (Site Restoration) is complete. Milestone #7 (Substantial Completion) is reporting 0 days of positive float. The Contractor is meeting production forecasts at this time.

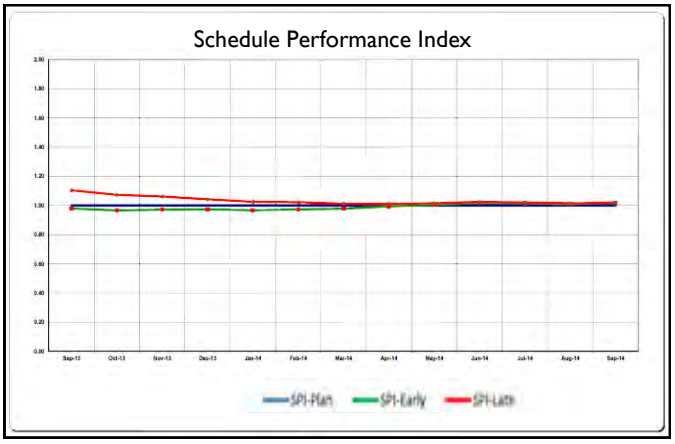
The Critical Path continues through the installation of the station roof slabs, basement level and platform floor slabs under a modified top down construction plan. U830 is now preparing the crossover for rail installation. Station Finishes will continue and final testing and commissioning will then complete the U250 work.

| Activity Name | Start | Finish |
|---|---|---|
| ULINK U250 - Construction - UW Station | 05-Apr-11 A | 14-Nov-14 |
| CONSTRUCTION | 05-Apr-11 A | 14-Nov-14 |
| MILESTONES-2 | 06-May-13 A | 14-Nov-14 |
| MILESTONE 2 (60d FROM OCC OF EAST BOUNDARY F3) (01 Apr 13) RESTORATION & REESTABLISHMENT OF NORTHERN ACCESS | | 06-May-13 A |
| MILESTONE 5 (1033d FROM NTP) (31 Jan 14) UWS ROOM ACCESS COMPLETION FOR ALL SYSTEM ROOMS | | 29-Jan-14 A |
| MILESTONE 6 (1160d FROM NTP) (07 Jun 14) RESTORATION OF THE SITE OUTSIDE OF THE CONSTRUCTION WORK AREA | | 06-Jun-14 A |
| MILESTONE 7 SUBSTANTIAL COMPLETION OF ALL WORK (1320d FROM NTP) (14 Nov 14) SUBSTANTIAL COMPLETION OF ALL WORK | | 14-Nov-14* |
| STATION | 05-Apr-11 A | 07-Nov-14 |
| CROSSOVER | 01-Aug-12 A | 29-Oct-14 |
| ABOVE GRADE ENTRY | 31-Aug-12 A | 12-Nov-14 |
| PEDESTRIAN BRIDGE | 29-Feb-12 A | 20-Oct-14 |



## Schedule Performance Index

The U250 Schedule Performance Index (SPI) has risen slightly to above 1.00 this period. Construction progress is trending per plan as the U250 Contractor is in full swing of MEP and architectural finishes. Coordination with U830 continues.




## Key Activities

Current Period

- Staff vacated the field office trailers and continued demolition, final excavation, and restoration of the southwest corner.
- Continued commission test demonstrations.
- Continued escalator balustrade and tread installations.
- Continued testing and balancing throughout the building.
- Continued Building Management System (BMS) panel installation and terminations.
- Continued light/speaker assembly installation over Chamber escalators; continued fire alarm system cabling and terminations throughout the building.
- Continued sidewalk restoration north of Walla Walla St., and concrete pedestrian plaza installation; continued landscaping, and installation of irrigation.

Next Period

- Continue grading and restoration efforts at the southwest corner of the site.
- Continue restoration of west plaza, including landscaping and irrigation.
- Continue concrete site wall formwork, reinforcing, and placement.
- Continue Building Management System (BMS) panel installation and terminations.
- Continue fire alarm system cabling and terminations throughout the building.
- Continue escalator balustrade and tread installations
- Continue testing and commissioning activities.
- Continue tunnel ventilation equipment testing and startup activities.
- Commence lowering U220-installed water line W-3 to provide 36" of cover to final grade.

## Closely Monitored Issues

- MTP SP1 pedestrian bridge guardrail tolerance concerns and concerns with the specified coating have resulted in consideration of a modification to aluminum guardrail for the bridge and head house. Negotiations are ongoing with a revised cost proposal received adding costs for including Stair 2 and 3 guardrails.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***U250 Contractor - Hoffman Construction Co.*** | |
| Original Contract Value | 141,745,898 |
| Change Order Value | 5,588,294 |
| Current Contract Value | 147,334,192 |
| Total Actual Cost (Incurred to date) | 142,097,509 |
| Financial Percent Complete: | 96% |
| Physical Percent Complete: | 98% |
| Authorized Contingency | 7,087,295 |
| Contingency Drawdown | 5,588,294 |
| Contingency Index | 1.21 |

*Metal panel base installation at the headhouse is ongoing.*

# U830 Contract – *Track, Signal, Traction Power and Communications*

## Current Progress

Track construction is now at approximately 97% complete with the delivery of the crossover this period track construction is expected to be complete in October. Casting of the floating slab continued this period and delivery and installation have commenced this period with completion in October. Permanent power was established at the UWS. Switchgear installation has commenced at CHS. OCS brackets installation is underway. Coordination between station contractors continues.

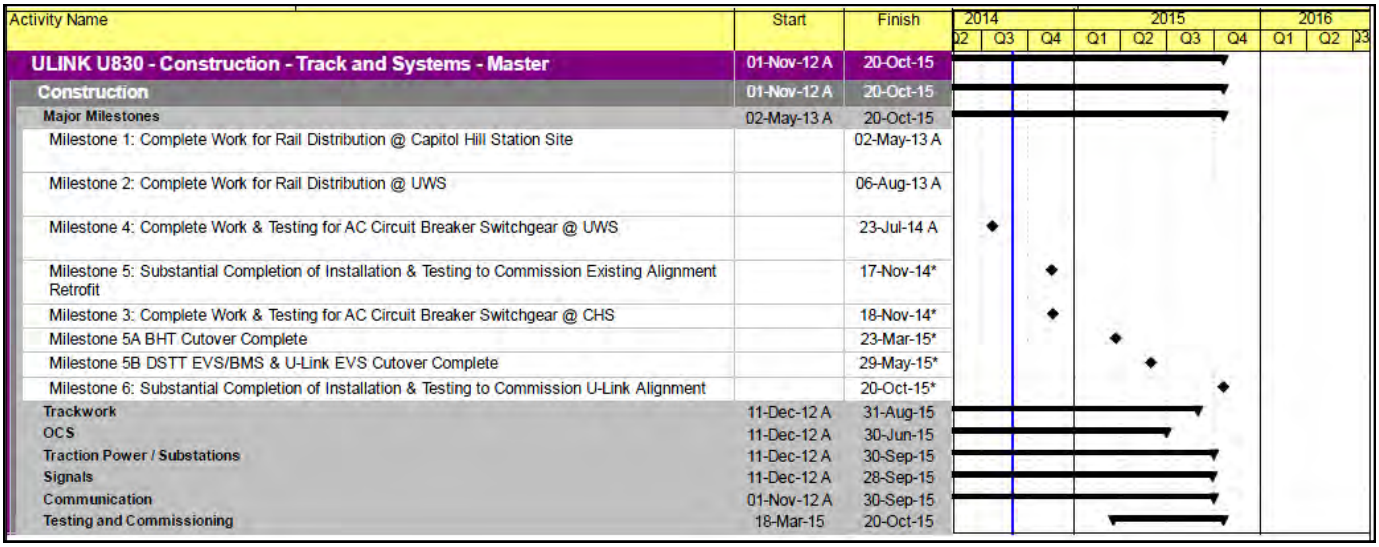
Work progress continued with approximately 51% physically complete against 64% contract time expended.

## Schedule/Critical Path

No update was provided for the September schedule update. Based on the recovery schedule a change order for redefining Milestone #5 (SCADA Cutover of Initial Segment) will be required. Milestone #6 (Substantial Completion) is now October 20th due to the late turnover of systems room by the U240 contractor this period. Overall impacts to the master schedule are under review.

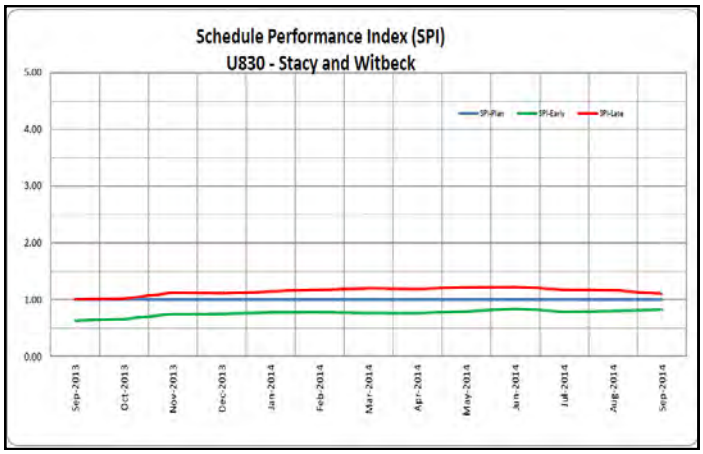
The U830 Critical Path runs through the procurement of the 26kv switchgear for Pine Street and revisions identified in late July. Contractor production rates and construction submittals are being tracked closely.

| Activity Name | Start | Finish |
|---|---|---|
| ULINK U830 - Construction - Track and Systems - Master | 01-Nov-12 A | 20-Oct-15 |
| Construction | 01-Nov-12 A | 20-Oct-15 |
| Major Milestones | 02-May-13 A | 20-Oct-15 |
| Milestone 1: Complete Work for Rail Distribution @ Capitol Hill Station Site | | 02-May-13 A |
| Milestone 2: Complete Work for Rail Distribution @ UWS | | 06-Aug-13 A |
| Milestone 4: Complete Work & Testing for AC Circuit Breaker Switchgear @ UWS | | 23-Jul-14 A |
| Milestone 5: Substantial Completion of Installation & Testing to Commission Existing Alignment Retrofit | | 17-Nov-14* |
| Milestone 3: Complete Work & Testing for AC Circuit Breaker Switchgear @ CHS | | 18-Nov-14* |
| Milestone 5A BHT Cutover Complete | | 23-Mar-15* |
| Milestone 5B DSTT EVS/BMS & U-Link EVS Cutover Complete | | 29-May-15* |
| Milestone 6: Substantial Completion of Installation & Testing to Commission U-Link Alignment | | 20-Oct-15* |
| Trackwork | 11-Dec-12 A | 31-Aug-15 |
| OCS | 11-Dec-12 A | 30-Jun-15 |
| Traction Power / Substations | 11-Dec-12 A | 30-Sep-15 |
| Signals | 11-Dec-12 A | 28-Sep-15 |
| Communication | 01-Nov-12 A | 30-Sep-15 |
| Testing and Commissioning | 18-Mar-15 | 20-Oct-15 |




## Schedule Performance Index

The SPI based on early forecast remains below 1.0 at 0.9 rising slightly from last period but is based on forecasts due to no pay application was received at this time. Late equipment procurement and delays to construction commencement and design activities have been the root cause of the low SPI.



## Key Activities

Current Period

- Contractor continued performing change order work and punch list items for the renovation of the Operation and Maintenance Facility (OMF).

*Trackwork*

- Continued welding and setting rail to final line and grade in the tunnels.
- Commenced the installation of the double crossover at UWS.
- Continued installation of floating slab segments.

*Traction Power/Signal/Com-SCADA Systems*

- Continued installation of fiber optic cable between CHS and UWS.
- Continued installation of overhead catenary system (OCS) in the tunnels.
- Continued installation of cable and end devices in the tunnel cross passages.
- Continue installation of 26kV equipment and cables at CHS.
- Continued field modification of existing system at Beacon Hill Station and DSTT.
- Commenced installation of the signal cables in the tunnels.
- Ongoing design and software development for all system scopes.

Next Period

- Continue welding and setting rail to final line and grade in the tunnels. Remaining trackwork anticipated to be completed by end of November.
- Continue installation of the double crossover at UWS.
- Continue installation of floating slab segments.
- Continue installation the following: fiber optic cable between CHS and UWS, overhead catenary system (OCS) in the tunnels, cable and end devices in the tunnel cross passages, a 26kV equipment and cables at CHS, and signal cables in the tunnels.
- Continue field modification of existing system at Beacon Hill Station and DSTT.
- Ongoing design and software development for all system scopes.
- Contractor scheduled to receive acceptance for the OMF renovation work.

## Closely Monitored Issues

- SCADA Retrofit: In order to mitigate potential impacts to remaining work and other ST contracts for Milestone # 5, Contractor has proposed to re-sequence programming and perform factory/field acceptance testing of SCADA components in phases. The proposed plan is detailed in the Contractor's Recovery Schedule, which is contingent upon ST Change Control Board approval.
- Current focus is on the on-going coordination with the two station contractors in preparation for the closure of construction access points at UWS and systems room access at CHS.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***U830 GC/CM Contractor - Stacy & Witbeck*** | |
| Original Contract Value | $119,167,433 |
| Change Order Value | $2,160,706 |
| Current Contract Value | $121,328,139 |
| Total Actual Cost (Incurred to date) | $69,869,243 |
| Financial Percent Complete | 57% |
| Physical Percent Complete: | 54% |
| Authorized Contingency | $5,958,373 |
| Contingency Drawdown | $2,160,706 |
| Contingency Index | 1.5 |

*Main terminal board installation in the UWS Signal Room.*

## U820 Contract - *LRV Storage and Yard Expansion*
## P821 Contract - *Light Rail Vehicles*
## C802 Contract - *Signals Systems (Yard Expansion)*
## Other Systems - *Radio Console, Fare Collection.*

### Key Activities

Current Period

***Closed Contracts***

- C802 Signals Yard Expansion (pending close out)
- U820 LRV Storage and Yard Expansion
- U826 Radio Console Upgrade
- U860 Network Fiber
- U820- LRV Storage and Yard Expansion

*P821 – Light Rail Vehicles*

- Contract Close Out on hold until repair to the Traction Power/ Gear Unit is completed.

*C802 - Signals System (Yard Expansion)*

- Completed all work but pending close-out.

*Other Systems*

- U835 EMI/Vibration & Wheel Flat Monitoring – continued final design activities and site surveys
- U810 MOW – 60% Design Submitted
- U829 Fare Collection Contracts (two contracts – TVM (finalizing negotiation) and Orca (card readers on hand and is readied for installation next year)

Next Period

*P821 – Light Rail Vehicles*

- Contract Close Out on hold until repair to the Traction Power/ Gear Unit is completed.

*Other Systems*

- U835 EMI/Vibration & Wheel Flat Monitoring – continue final design activities and site surveys
- U810 MOW Continued Design and anticipate mobilization of construction activities.
- U829 Fare Collection Contracts – anticipate execution of TVM contract.

### Closely Monitored Issues

- None to report this period.

### P821 Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***P821 Manufacturer — Kinkisharyo Intl.**** | |
| Original Contract Value (U-Link Option) | $94,576,095 |
| Change Order Value | $4,598,480 |
| Current Contract Value | $99,174,575 |
| Total Actual Cost (Incurred To Date) | $99,174,575 |
| Financial Percent Complete: | 100% |
| Physical Percent Complete: | 100% |
| Authorized Contingency | $4,608,904 |
| Contingency Drawdown | $4,598,480 |
| Contingency Index | N/A |

**Change Order to Initial Segment LRV Contract*

### C802 Cost Summary

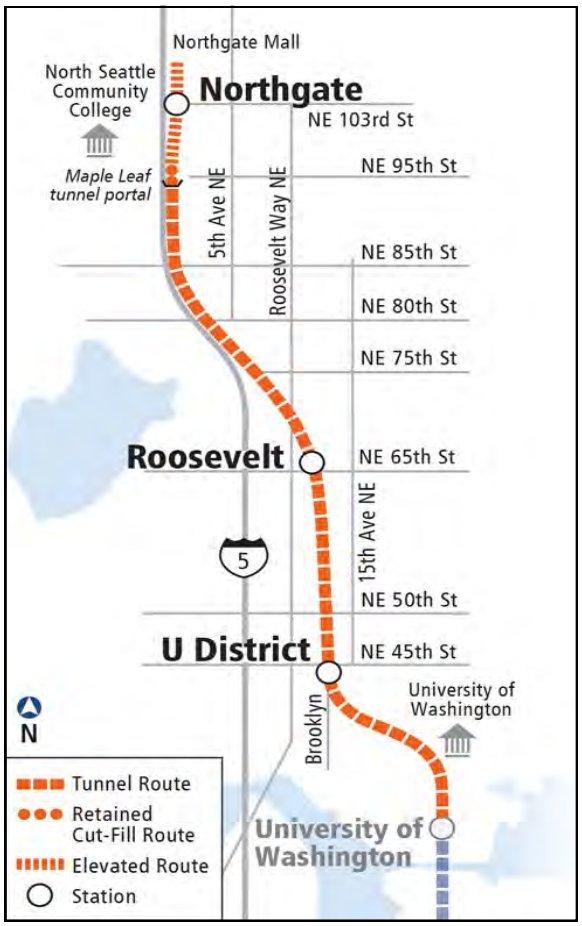
| Present Financial Status | Amount |
|---|---|
| ***C802 Train Control —GETS* Global Signaling, LLC*** | |
| Original Contract Value (U-Link Option) | $1,996,269 |
| Change Order Value | $15,390 |
| Current Contract Value | $2,011,659 |
| Total Actual Cost (Incurred To Date) | $2,011,659 |
| Financial Percent Complete: | 100% |
| Physical Percent Complete: | 100% |
| Authorized Contingency | $103,731 |
| Contingency Drawdown | $15,390 |
| Contingency Index | N/A |

**Change Order to Initial Segment Train Control Contract.*
*55% of contract costs are assigned to U-Link 45% Northgate Link.*

# Link Light Rail
# Northgate Link Extension

## Scope

| | |
|---|---|
| Limits: | The Northgate Link Extension consists of 4.3 miles of light rail extending from the University of Washington to Northgate. |
| Alignment: | The extension begins at the UW Station, boring tunnels under campus then continues north to a portal located north of NE 94th Street on the east side of I-5, then transitioning to an aerial structure running north to the Northgate Mall. |
| Stations: | The U District Station is an underground station located on the west side of the UW campus near Brooklyn Ave. and NE 45th St. The Roosevelt Station is an underground station located near NE 65th St. and 12th Ave NE. The Northgate Station is an elevated station located at the southwest edge of the Northgate Mall property. |
| Systems: | Include Signals, track electrification, and SCADA communications, and an additional 40 light rail vehicles. |
| Budget: | $2.131 Billion |
| Service: | September 2021 |
| Phase: | Final Design and Construction |




*Map of Northgate Link Extension route and stations.*

## Key Project Activities

- Continued to advance discussions regarding a Possession and Use Agreement for Northgate Mall properties with the Simon Property Group. A draft agreement is scheduled to be ready for review in October.
- Prepared materials for the Light Rail Review Panel (LRRP) review of the Northgate Parking Garage, which is scheduled for early October.
- Issued a Request for Qualifications (RFQ) to initiate the procurement of a GC/CM Contractor for the Northgate Station, Aerial Guideway and Garage (N160).
- *For N11*, advertised for bids for the construction contract to relocate 26 kV power lines in the Northgate area to accommodate the Aerial Guideway and Station.
- *For N125*, tunnel mining operations were suspended for the month of September to allow the Contractor to prepare TBM #2 for launching. Fabrication of TBM #2 was nearly completed and testing of major components was started.
- *At the Roosevelt Station*, the Contractor continued excavation of the station box and installed the first three rows of tie-backs.
- *At the U District Station*, all activities for excavation of are underway, including dewatering, tie-back installation and placement of excavation support struts. This excavation is about 20% complete.

## Closely Monitored Issues

- The Contractor has requested a noise variance to allow work at night at the Roosevelt Station. This request is being carefully reviewed with the neighborhood and the City DPD.
- The proposed route for the relocation of the 115 kV power lines in the Northgate area continues to be opposed by a number of local residents.
- With the final property acquisitions in progress, increased efforts will be needed from all involved parties to ensure timely resolution of issues.

## Project Cost Summary

The Northgate Link project cost is summarized below by two cost categorizations. In the first table, the cost is summarized in accordance with Sound Transit's Work Breakdown Structure (WBS). The second table summarizes the project in accordance with the FTA's Standard Cost Category (SCC) format. The figures in both tables are shown in millions.

Cost Summary by Phase

| Project Phase | Baseline Budget | Current Adopted Budget | Commitment to Date | Incurred to Date | Estimated Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| ADMINISTRATION | $149.5 | $149.5 | $22.6 | $24.4 | $149.5 | $0.0 |
| PRELIMINARY ENGINEERING | $15.1 | $15.1 | $15.1 | $15.1 | $15.1 | $0.0 |
| FINAL DESIGN | $118.5 | $118.5 | $102.5 | $72.8 | $118.5 | $0.0 |
| CONSTRUCTION SERVICES | $112.1 | $112.1 | $78.4 | $11.5 | $112.1 | $0.0 |
| 3rd PARTY AGREEMENTS | $11.8 | $11.8 | $10.4 | $3.2 | $11.8 | $0.0 |
| CONSTRUCTION | $1,338.1 | $1,338.1 | $466.2 | $160.2 | $1,338.1 | $0.0 |
| VEHICLES | $259.1 | $259.1 | $4.7 | $0.1 | $259.1 | $0.0 |
| ROW | $127.3 | $127.3 | $54.9 | $53.8 | $127.3 | $0.0 |
| **Total** | **$2,131.4** | **$2,131.4** | **$754.7** | **$341.1** | **$2,131.4** | **$0.0** |

The Estimated Final Cost (EFC) for the project as of this reporting period is $2,131.4M, which is equal to the project budget. This period approximately $10.7M was incurred, of which $7.6M was for the N125 tunneling contract. Another $1.0M was for civil and systems final design and design support during construction, and $0.72M was for construction management. The remaining expenditures were for OCIP costs, right-of-way, third party coordination, staff, and other direct charges.

Cost Summary by SCC

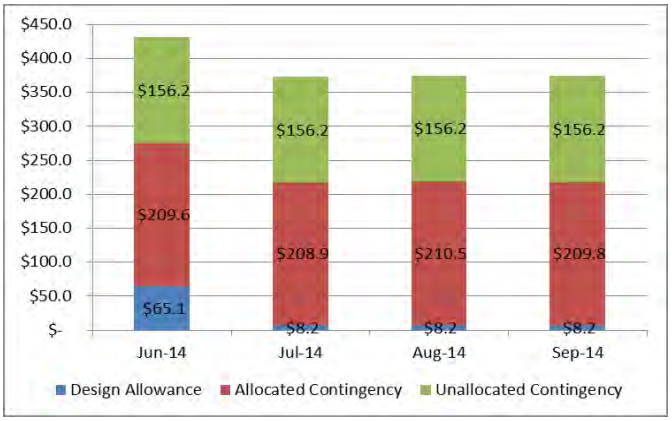
| SCC Element | Baseline Budget | Current Adopted Budget | Commitment to Date | Incurred to Date | Estimated Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| 10 GUIDEWAY & TRACK | $615.1 | $600.6 | $327.4 | $108.3 | $593.9 | $6.7 |
| 20 STATIONS | $434.2 | $360.5 | $39.7 | $13.0 | $376.5 | ($16.0) |
| 30 SUPPORT FACILITIES: YARD, SHOP | $5.3 | $5.3 | $5.2 | $5.2 | $5.2 | $0.1 |
| 40 SITEWORK & SPECIAL CONDITIONS | $64.3 | $132.6 | $87.9 | $32.4 | $136.5 | ($4.0) |
| 50 SYSTEMS | $110.9 | $110.9 | $0.9 | $0.9 | $110.9 | $0.0 |
| **Construction Subtotal (SCC 10 - 50)** | **$1,229.9** | **$1,209.9** | **$461.1** | **$159.7** | **$1,223.1** | **($13.2)** |
| 60 ROW, LAND, EXISTING IMPROVEMENTS | $143.1 | $116.8 | $54.9 | $53.8 | $116.8 | $0.0 |
| 70 VEHICLES | $236.9 | $236.9 | $4.7 | $0.1 | $236.9 | $0.0 |
| 80 PROFESSIONAL SERVICES | $400.8 | $411.6 | $234.0 | $127.4 | $405.4 | $6.2 |
| 90 CONTINGENCY | $120.8 | $156.2 | $0.0 | $0.0 | $149.2 | $7.0 |
| **Capital Total (SCC 10 - 90)** | **$2,131.4** | **$2,131.4** | **$754.7** | **$341.1** | **$2,131.4** | **$0.0** |

The Estimated Final Cost (EFC) for some contract packages have been reassessed and revised as a result of updated design development estimates and the award of Contract N125 at an amount lower than the adopted budget. The variances associated with some of the SCC groups shown above reflect the updated EFC due to these revisions.

## Cost Contingency Status

Compared to the baseline amount of $396.2 million, the Total Contingency has decreased by $22 million to $374.2 million, which is 20.9% of project work remaining. During this reporting period, a decrease of $0.7M occurred. Detailed information is provided below. (*See detailed information on Allocated Contingency provided below.)*

| Contingency Status | Baseline | | Current | |
|---|---|---|---|---|
| | Amount | % of Total | Amount | % of Work Remaining |
| Design Allowance | $ 113.9 | 5.3% | $ 8.2 | 0.5% |
| Allocated Contingency | $ 184.0 | 8.6% | $ 209.8 | 11.7% |
| Unallocated Contingency | $ 98.3 | 4.6% | $ 156.2 | 8.7% |
| **Total** | **$ 396.2** | **18.6%** | **$ 374.2** | **20.9%** |




***Design Allowance*** – Compared to the baseline amount of $113.9M, Design Allowance has decreased by $105.7M to $8.2M . The DA amount was adjusted this month to incorporate several updated construction cost estimates that have utilized DA as the scope development has progressed.

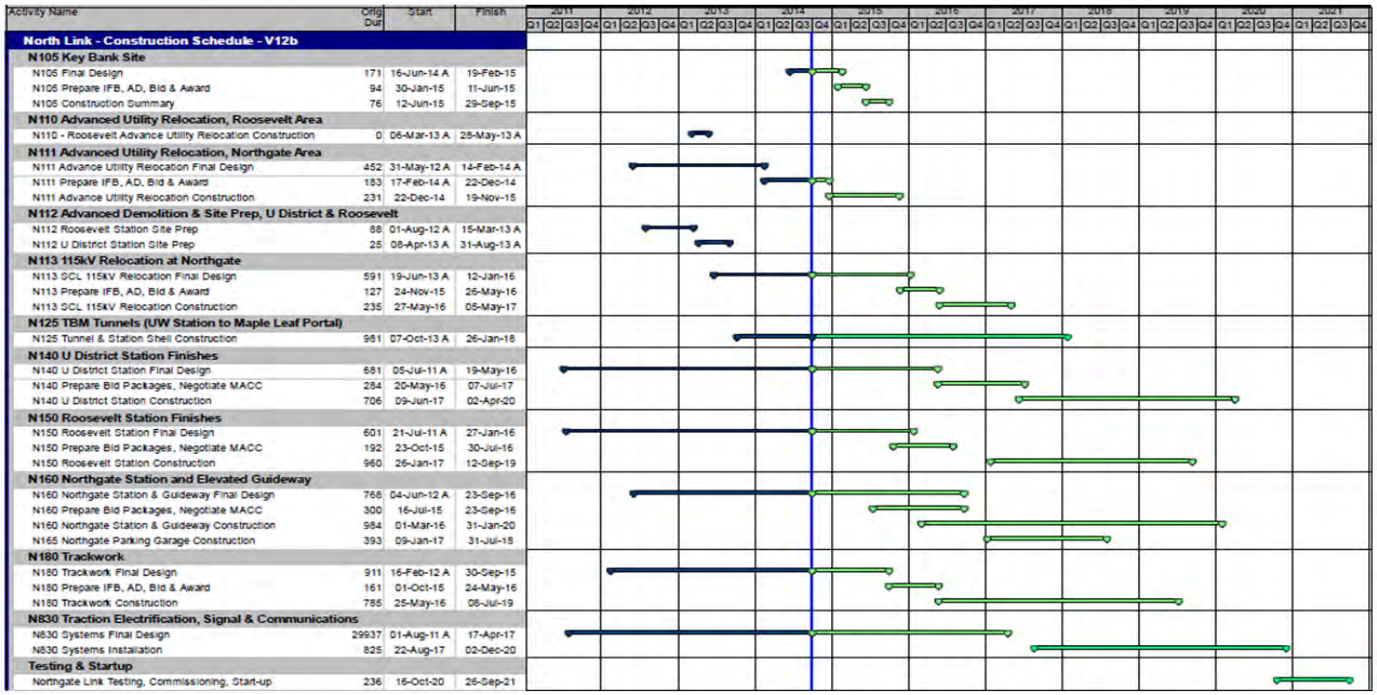
***Allocated Contingency*** – Compared to the baseline amount of $184.0 million, Allocated Contingency has increased by $25.8 million to $209.8 million. During this reporting period, a decrease of $0.7 million occurred due to the approval of change orders under the Civil Final Design contract, and execution of miscellaneous changes in the N125 tunneling contract.

***Unallocated Contingency*** – Compared to the baseline amount of $98.3 million, Unallocated Contingency has increased by $57.9 million to $156.2 million. No changes to UAC occurred during this period.

## Project Schedule

Sound Transit continued reviewing the N105 Key Bank Remediation/Demo 60% design while 90% design is in Quality Control with an early October submittal date. Soil remediation is underway and start of site demolition has moved up to June 2015 based on revised bid and award durations. N111 Northgate Advanced Utility Relocation was advertised in early September with bids now due October 21. N113 115kV Relocation at Northgate has restarted in August with the 60% design scheduled for first week of November, and construction is scheduled to start 1st QTR 2016. Geotechnical report based on August borings is in progress. N125 TBM Tunnels is now driven by the procurement of TBM No. 3. Work has started on the preparation of the TBM but it is behind the baseline schedule and is now impacting the overall critical path. TBM No. 1 was idled during September while TBM No. 2 was completed and moved to the headwall for testing; launch was pushed back to end of October, driving a second negative float path within the schedule. For N140 U District Station Finishes, GC/CM began Constructability Review process as 90% design gets underway. Construction start for N140 is now forecast for 2nd QTR 2018. N150 Roosevelt Station Finishes continues the 90% design with an estimated construction start in the 1st QTR 2017. N160 Northgate Station & Guideway is currently in Comment Resolution for the 90% design and the GC/CM procurement is in progress. The Northgate Station Parking Garage design is 30% design and is currently in review. Final Design Consultant and Sound Transit are exploring options to bring the Garage design to the 90% level in order to meet the permit submission dates and facilitate inclusion of the garage design into the N160 100% design package. ST and SPG continue to work on resolution of several temporary parking issues. The trackwork design, contract N180 Trackwork is on hold pending completion of industry review of the floating slab. The overall Northgate Link Extension completion date still shows 165 days of overall float to the September 2021 Revenue Service date. The Northgate Link Project Schedule is in the following page.

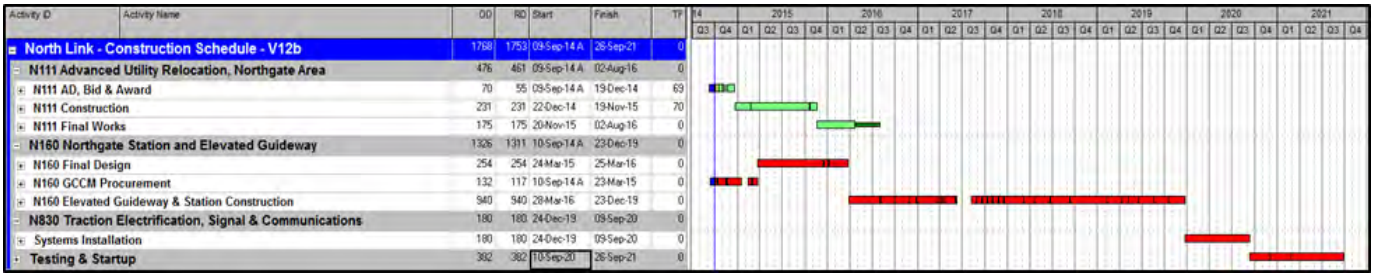
## Project Schedule, continued



| Activity Name | Orig Dur | Start | Finish |
|---|---|---|---|
| **North Link - Construction Schedule - V12b** | | | |
| **N105 Key Bank Site** | | | |
| N105 Final Design | 171 | 16-Jun-14 A | 19-Feb-15 |
| N105 Prepare IFB, AD, Bid & Award | 94 | 30-Jan-15 | 11-Jun-15 |
| N105 Construction Summary | 76 | 12-Jun-15 | 29-Sep-15 |
| **N110 Advanced Utility Relocation, Roosevelt Area** | | | |
| N110 - Roosevelt Advance Utility Relocation Construction | 0 | 06-Mar-13 A | 28-May-13 A |
| **N111 Advanced Utility Relocation, Northgate Area** | | | |
| N111 Advance Utility Relocation Final Design | 452 | 31-May-12 A | 14-Feb-14 A |
| N111 Prepare IFB, AD, Bid & Award | 183 | 17-Feb-14 A | 22-Dec-14 |
| N111 Advance Utility Relocation Construction | 231 | 22-Dec-14 | 19-Nov-15 |
| **N112 Advanced Demolition & Site Prep, U District & Roosevelt** | | | |
| N112 Roosevelt Station Site Prep | 88 | 01-Aug-12 A | 15-Mar-13 A |
| N112 U District Station Site Prep | 25 | 08-Apr-13 A | 31-Aug-13 A |
| **N113 115kV Relocation at Northgate** | | | |
| N113 SCL 115kV Relocation Final Design | 591 | 19-Jun-13 A | 12-Jan-16 |
| N113 Prepare IFB, AD, Bid & Award | 127 | 24-Nov-15 | 26-May-16 |
| N113 SCL 115kV Relocation Construction | 235 | 27-May-16 | 05-May-17 |
| **N125 TBM Tunnels (UW Station to Maple Leaf Portal)** | | | |
| N125 Tunnel & Station Shell Construction | 961 | 07-Oct-13 A | 26-Jan-18 |
| **N140 U District Station Finishes** | | | |
| N140 U District Station Final Design | 681 | 05-Jul-11 A | 19-May-16 |
| N140 Prepare Bid Packages, Negotiate MACC | 284 | 20-May-16 | 07-Jul-17 |
| N140 U District Station Construction | 706 | 09-Jun-17 | 02-Apr-20 |
| **N150 Roosevelt Station Finishes** | | | |
| N150 Roosevelt Station Final Design | 601 | 21-Jul-11 A | 27-Jan-16 |
| N150 Prepare Bid Packages, Negotiate MACC | 192 | 23-Oct-15 | 30-Jul-16 |
| N150 Roosevelt Station Construction | 960 | 26-Jan-17 | 12-Sep-19 |
| **N160 Northgate Station and Elevated Guideway** | | | |
| N160 Northgate Station & Guideway Final Design | 768 | 04-Jun-12 A | 23-Sep-16 |
| N160 Prepare Bid Packages, Negotiate MACC | 300 | 16-Jul-15 | 23-Sep-16 |
| N160 Northgate Station & Guideway Construction | 984 | 01-Mar-16 | 31-Jan-20 |
| N165 Northgate Parking Garage Construction | 393 | 09-Jan-17 | 31-Jul-18 |
| **N180 Trackwork** | | | |
| N180 Trackwork Final Design | 911 | 16-Feb-12 A | 30-Sep-15 |
| N180 Prepare IFB, AD, Bid & Award | 161 | 01-Oct-15 | 24-May-16 |
| N180 Trackwork Construction | 785 | 25-May-16 | 08-Jul-19 |
| **N830 Traction Electrification, Signal & Communications** | | | |
| N830 Systems Final Design | 29937 | 01-Aug-11 A | 17-Apr-17 |
| N830 Systems Installation | 825 | 22-Aug-17 | 02-Dec-20 |
| **Testing & Startup** | | | |
| Northgate Link Testing, Commissioning, Start-up | 236 | 16-Oct-20 | 26-Sep-21 |

## Critical Path Analysis

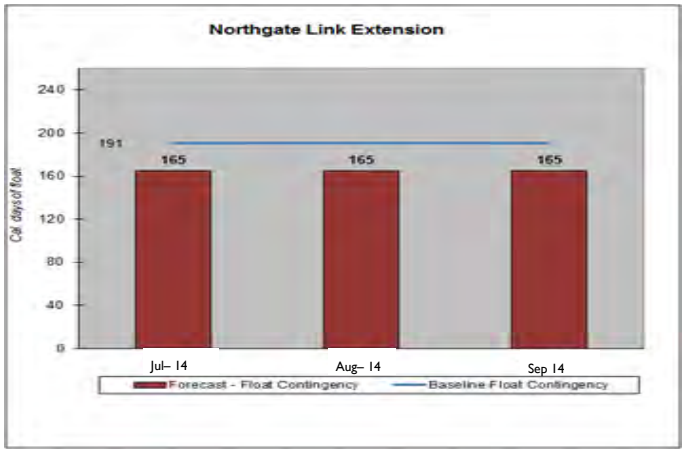
The longest path through the Northgate Link projects remains within the N111 and N160 contracts. N125 contractual milestone dates remain unchanged in the period. The N125 contractor's schedule shows them behind and a recovery schedule has been requested. The critical path for this contract is now driven by the TBM No. 3 procurement, followed by the tunneling for the southbound bore. The ST CM group is currently evaluating construction sequences for the trackwork contract (N180) which may have an impact on the overall critical path. The Revenue Service date is still forecast for September 2021.



| Activity ID | Activity Name | OD | RD | Start | Finish | TF |
|---|---|---|---|---|---|---|
| **North Link - Construction Schedule - V12b** | | 1768 | 1753 | 09-Sep-14 A | 26-Sep-21 | 0 |
| **N111 Advanced Utility Relocation, Northgate Area** | | 476 | 461 | 09-Sep-14 A | 02-Aug-16 | 0 |
| N111 AD, Bid & Award | | 70 | 55 | 09-Sep-14 A | 19-Dec-14 | 69 |
| N111 Construction | | 231 | 231 | 22-Dec-14 | 19-Nov-15 | 70 |
| N111 Final Works | | 175 | 175 | 20-Nov-15 | 02-Aug-16 | 0 |
| **N160 Northgate Station and Elevated Guideway** | | 1326 | 1311 | 10-Sep-14 A | 23-Dec-19 | 0 |
| N160 Final Design | | 254 | 254 | 24-Mar-15 | 25-Mar-16 | 0 |
| N160 GCCM Procurement | | 132 | 117 | 10-Sep-14 A | 23-Mar-15 | 0 |
| N160 Elevated Guideway & Station Construction | | 940 | 940 | 28-Mar-16 | 23-Dec-19 | 0 |
| **N830 Traction Electrification, Signal & Communications** | | 180 | 180 | 24-Dec-19 | 09-Sep-20 | 0 |
| Systems Installation | | 180 | 180 | 24-Dec-19 | 09-Sep-20 | 0 |
| **Testing & Startup** | | 382 | 382 | 10-Sep-20 | 26-Sep-21 | 0 |

### Critical Path Float

Northgate Link schedule baseline included 191 days of project-wide float. Some of those days have been allocated as buffers at critical interfaces between adjacent contracts. This distribution reduced unallocated float to 168 days. Three more days were used when the N125 Contract NTP date was three days later than the assumed baseline. The adjacent graph shows the current project-wide float remains at 165 days prior to Revenue Service in September 2021. This is unchanged since September 2013.



## Construction Safety

Safety Statistics for the reporting period and year-to-date are summarized in the table below.

| Data/Measure | September 2014 | Year to Date | Project to Date |
|---|---|---|---|
| Recordable Injury/Illness Cases | 0 | 8 | 8 |
| Days Away From Work Cases | 0 | 0 | 0 |
| Total Days Away From Work | 0 | 0 | 0 |
| Restricted or Modified Work Cases | 0 | 4 | 4 |
| Total Days Restricted or Modified Work | 21 | 152 | 152 |
| First Aid Cases | 0 | 7 | 8 |
| Reported Near Mishaps | 1 | 11 | 13 |
| Average Number of Employees on Worksite | 378 | - | - |
| Total # of Hours (GC & Subs) | 17,950 | 375,756 | 420,840 |
| **OSHA Incident Rates** | **Monthly Average** | **Year to Date** | **Project to Date** |
| Recordable Injury Rate | 0.00 | 4.26 | 3.80 |
| DART Rate | 0.00 | 2.13 | 1.90 |
| *Recordable National Average* | 3.70 | 3.70 | 3.70 |
| *DART National Average* | 2.00 | 2.00 | 2.00 |
| *Recordable WA State Average* | 6.50 | 6.50 | 6.50 |
| *DART WA State Average* | 3.40 | 3.40 | 3.40 |

## Right of Way

The U District and Roosevelt stations require the acquisition of a range of property interests including fee takings for stations and staging areas; tunnel easements are required for the running tunnel. These acquisitions will result in owner and tenant, residential and commercial relocations. The summary table for Right-of-Way is in the following page.

**Roosevelt Station** – All parcels have been acquired.

**U District Station** – All parcels have been acquired.

**Northgate Station -** One parcel awaiting owner appraisal and currently working on relocations. Appraisal task order in process for one parcel. One parcel revised appraisal being reviewed by ST prior to FTA submittal. One parcel worked to clarify requested updates to TCE documents and sent ROE request package to owner. Three new parcels will be submitted for ST Board approval in October.

**Tunnel Easements** : *UW Station to U District Station* - All parcels have been acquired. *Roosevelt Station to Northgate Station*– All required parcels have been acquired.

The right-of-way status as of this period is summarized below.

| Line Section | Total Parcels Certified | Offers Made | Signed Agreements | Admin. Settlements | Possession and Use (P&U) | Closings to date | Baseline Relocations Required | Relocations Completed |
|---|---|---|---|---|---|---|---|---|
| U District Station | 16 | 15 | 0 | 0 | 0 | 15 | 4 | 2 |
| Roosevelt Station | 20 | 18 | 0 | 0 | 0 | 18 | 26 | 26 |
| Tunnel Easements | 190 | 188 | 0 | 0 | 0 | 188 | 0 | 0 |
| Northgate Station | 8 | 6 | 0 | 0 | 0 | 0 | 13 | 0 |
| **Total** | **234** | **227** | **0** | **0** | **0** | **221** | **43** | **28** |

## Quality Assurance Activities

Activities

- N105: 60% Design Submittal review.
- N111: IFB Submittal review.

Issues

- None to report.

Summary

| Description | Sep 2014 | Notes |
|---|---|---|
| No. of Audits Planned | 0 | None |
| No. of Audits Completed | 0 | None |
| Reports in Progress | 0 | None |
| No. of Audits Postponed | 2 | N125 RE Audit; N180 100% Design |

## Sound Transit Board Actions

| Board Action | Description | Date |
|---|---|---|
| | *None to report this period.* | |

## Environmental

- Completed SEPA Addendum for the N113 115kV Line Relocation.

## Community Outreach

*Northgate Station*

- Continued responding to public comments concerning the transmission line relocation project.

*Maple Leaf Portal and tunnels*

- Distributed pre-construction survey notification letters to residents along the tunnel alignment.
- Continued to prepare for the Northgate Station's Safety drop-in sessions.

*Roosevelt Station*

- Delivered night noise notification for bridge girder setting.
- Coordinated schedule and other impacts with Roosevelt High School regarding water shut down; presented project update to PTSA of Roosevelt High.
- Installed additional truck safety sign on 12th Avenue NE construction wall.
- Continued working with SDOT toward permitting a third Roosevelt kiosk location.

*U District Station*

- Coordinated perimeter site walk with UW Tower security and Sound Transit Safety and Security team members.
- Coordinated with City Neighborhood Council Coordinator and SDOT regarding "Road Closed" signage.
- Attended "Up Your Ave" community event and approximately 600 people stopped by the ST booth.
- Distributed construction alert for early morning strut deliveries and placement.

*Business Mitigation*

- Distributed "Spend Five, Get a Drive" promotional materials to directly impacted businesses.
- Provided information for U District social media program.
- Finalized Thrive marketing materials and sent them to printer.
- Provided project information poster for Whole Foods to display.

## Final Design Overview

Sound Transit has executed two key contracts with professional services consultants for the Final Design of the Northgate Link Extension. Jacobs Associates (JA) is providing civil engineering and architectural final design services. LTK Engineering Services (LTK) is providing systems engineering final design services.

## Final Design Activities

Contract Package N105 –*Key Bank Demolition and Remediation:*

- Continued 90% design effort.

Contract Package N111 –*Advanced Electrical Utility Relocation at Northgate Station Vicinity*:

- Completed cable pulling calculations for IFB addendum package

Contract Package N113 –*115kV Relocation at Northgate Sta.*

- Continued 60% design effort and completed impact assessment for Comcast equipment.
- Resolution of the 13 proposed pole locations is ongoing.

Contract Package N140 - *U District Sta. Civil and Finishes:*

- Primary design effort on hold pending ongoing GC/CM mobilization and integration.
- Commenced preconstruction phase activities with the GC/CM contractor including workshop sessions.
- Continued Green Street concept plans.

Contract Package N150 - *Roosevelt Sta. Civil and Finishes*:

- Continued 90% design effort and incorporation of outstanding 60% comments.
- Continued working with GC/CM team on constructability recommendations and coordination of Contract N125 and N150 work sequencing.
- Continued work on Seismic design evaluation.

Contract Package N160 - *Northgate Sta. and Aerial Guideway Civil and Finishes:*

- Conducted review of parking layout at strip mall site and reviewed KCM bus layover area at WSDOT parking lot.
- Continued to provide updates to, and resolution of, 90% Outstanding Issues.

Contract Package N165 – *Northgate Parking Garage (will be included in N160):*

- Continue coordination for Northgate Parking Garage as directed by ST, including GC/CM procurement support.
- Coordinated with SPG on Nordstrom Deck site layout and function, stormwater reroute and phasing, CAD, and SPG lighting criteria.

Contract Package N180 – *Trackwork*:

- Completed development of memorandum on alternative approaches for guideway plinth dowel installation under Contract N160.
- Continued to monitor outstanding issues and information available from U- Link Contract U830.

• Contract Package N830 – *Traction Electrification, Signals, and Communications:*

- Updated CCTV camera locations for reflected ceiling plans and coordinated Emergency Ventilation Control diagrams.
- Continued development of a combined Division 1 specification for the Northgate Link and East Link preconstruction services work.
- Provided concepts for temporary supply of 26kV power to station switchboard for station commissioning.
- Coordinated with the N150 Team regarding TPSS room program requirements and equipment matrix including HVAC, floor flatness etc.

## Final Design Schedule

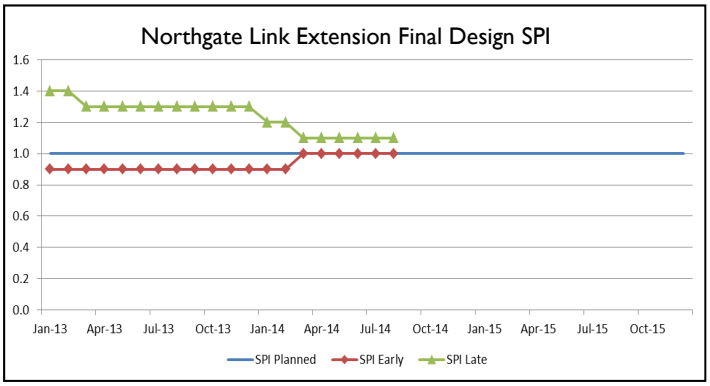
The table below summarizes the current civil Final Design submittal schedule for each contract package.

| Work Packages | 60% | | 90% | | 100% to ST | |
|---|---|---|---|---|---|---|
| | Plan | F/A* | Plan | F/A* | Plan | F/A* |
| N111 Advanced Utility Relocation – Northgate | 12/21/2012 | 5/23/2013A | 3/29/2013 | 10/15/2013A | 7/12/2013 | 1/31/2014 |
| N113 115kV Relocation at Northgate | 10/29/2013 | 11/7/2014 | 3/27/2014 | 4/14/2015 | 6/19/2014 | 9/3/2015 |
| N140 U District Station Finishes | 12/24/2011 | 4/27/2012A | 9/18/2012 | 7/15/2015 | 5/10/2013 | 4/7/2016 |
| N150 Roosevelt Station Finishes | 4/13/2012 | 2/27/2012A | 1/28/2013 | 12/18/2014 | 10/23/2013 | 9/10/2015 |
| N160 Northgate Sta. Civil/Finishes/Guideway | 6/27/2012 | 10/5/2012A | 4/17/2013 | 3/7/2014A | 11/26/2013 | 12/15/2015 |
| N180 Trackwork | 8/23/2012 | 8/23/2012A | 5/22/2013 | 4/8/2013A | 8/26/2013 | 11/18/2015 |
| N830 Traction Electrification, Signals, Communications | 12/12/2012 | 12/20/2012A | 4/10/2014 | 8/31/2015 | 12/9/2014 | 5/16/2016 |

F/A* = Forecast/Actual

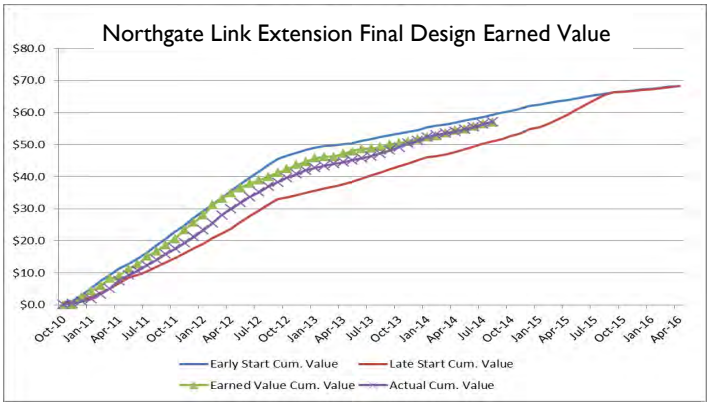
## Final Design Schedule Performance

For Final Design activities only, the Schedule Performance Index (SPI) reported this period is 1.0 based on the early start dates. The Design Consultant is meeting all of their design deliverable milestones. Additionally, the late start SPI is 1.1 indicating that the design consultant is meeting its planned work targets.




## Final Design Cost Performance

Through this period, the total amount spent for civil final design is $61.3M, which is approximately 69.1% of the total contract amount. For final design activities only, the total amount spent is $57.9M, which is approximately 84%. The consultant reported 83.4% complete for final design activities, resulting in an Earned Value of $57.5M. The cumulative Cost Performance Index (CPI) is currently 1.0, which indicates expenditures are in line with planned cost (Earned Value).




| Performance | Previous Period | Current Period | Cumulative To Date |
|---|---|---|---|
| Amount Invoiced | $57,142,677 | $796,009 | $57,938,686 |
| Spent | 82.9% | 1.2% | 84.0% |
| Earned Value | $56,947,208 | $522,421 | $57,469,629 |
| % Complete | 82.6% | 0.8% | 83.4% |
| **CPI** | **1.0** | **0.7** | **1.0** |

## Other Key Final Design Activities

*Geotechnical Investigation*
- Completed N113 laboratory testing.

*Surveying and ROW*
- Prepared N113 parcel maps and updated Northgate Mall parcel maps.
- Developed N150 ROW plan for SIP submittal.

*Permits*
- Completed MUP application for DPD permit requirements for the Key Bank parcel, and responded to DPD corrections.
- Continued draft application for the Roosevelt Station (Contract N150) MUP submittal to DPD.
- Revised N113 NEPA re-evaluation for delivery to ST.

*Construction Noise Variances*
- None to report this period.

*Noise Mitigation for At Grade and Elevated Guideway*
- Continued evaluation of proposed noise mitigation material for use in the Northgate area.

*Ground Borne Noise and Vibration*
- Continued to monitor U Link floating slab prototype manufacture and test planning.
- Continued preparation of the test plan for pre-revenue track vibration certification testing.

*Construction Cost Estimating*
- Began development of N105 90% cost estimate, and completed update of N140 60% cost estimate to the GC/CM format.

*Construction Schedules*
- Began development of N105 90% construction schedule.

*Quality Assurance*
- Completed QA audit of N105 90% design package, and continued review and checking of N160 60% comments incorporation.

*Design and Project Integration*
- Provided coordination and integration between all contracts in the Northgate area.
- Integration and coordination with Systems Consultant (LTK), Art Consultant and Station Artists continued as required.

## Major Construction Contract Packages

Construction of the Northgate Link Extension consists of eight major construction contract packages: seven civil packages and one combined systems package. Below is a brief scope description for each of these contract packages:

**N110 Utility Relocation at Roosevelt Station Area** - Relocation of electrical and communication facilities at the Roosevelt Station site. (Complete)

**N112 U District and Roosevelt Station Site Preparation** - Demolition of existing structures, grading and paving at the U District and Roosevelt Station sites. (Complete)

**N113 115kV Relocation at Northgate Station Area** - Relocation of overhead electrical facilities at the Northgate Station area.

**N125 TBM Tunnels UW Station to Maple Leaf Portal** - Tunneling work and support of excavation of station boxes for the U District and Roosevelt stations.

**N140 U District Station Finishes** - Civil and architectural finishes work for the U District Station.

**N150 Roosevelt Station Finishes**– Civil and architectural finishes work for the Roosevelt Station.

**N160 Northgate Station & Elevated Guideway** - Civil and architectural finishes work for the Maple Leaf Portal, the aerial guideway, and the Northgate Station and Tail Track.

**N165 Northgate Parking Garage** (will be part of N160) - Construction of a 450 stall parking garage to be located at the south corner of the existing Northgate Mall surface parking lot at NE 103rd St. near 1st Avenue NE.

**N830 Track Electrification, Signals, Communication System, and Track -** Installation of the major system elements – Traction Electrification, 26kV Distribution, Signals, and Communications and all Trackwork.

## Construction Schedule Highlights

| Package | Bid Advertisement | NTP | Substantial Completion |
|---|---|---|---|
| N105 – Keybank Remediation/Demo | March 2015 | Jul 2015 | Nov 2015 |
| N113 - SCL 115kV Relocate | Oct 2015 | Jan 2015 | Jan 2017 |
| N125 – TBM Tunnels | Jan 2013A | Sep 2013A | Feb 2018 |
| N140 – U District Station Finishes | Oct 2013A (GC/CM Precon) | Jun 2017 (construction) | Apr 2020 |
| N150 – Roosevelt Station Finishes | Apr 2013A (GC/CM Precon) | Jan 2017 (construction) | Sep 2019 |
| N160 – Northgate Station & Guideway | Dec 2014 | Nov 2016 | Sep 2019 |
| N180– Floating Slab & Trackwork | Jan 2016 | May 2016 | Jul 2019 |
| N830 – Systems & Track | Dec 2015 (GC/CM Precon) | Jan 2018 (construction) | Sep 2020 |

A = Actual

# Contract N125 – TBM Tunnels

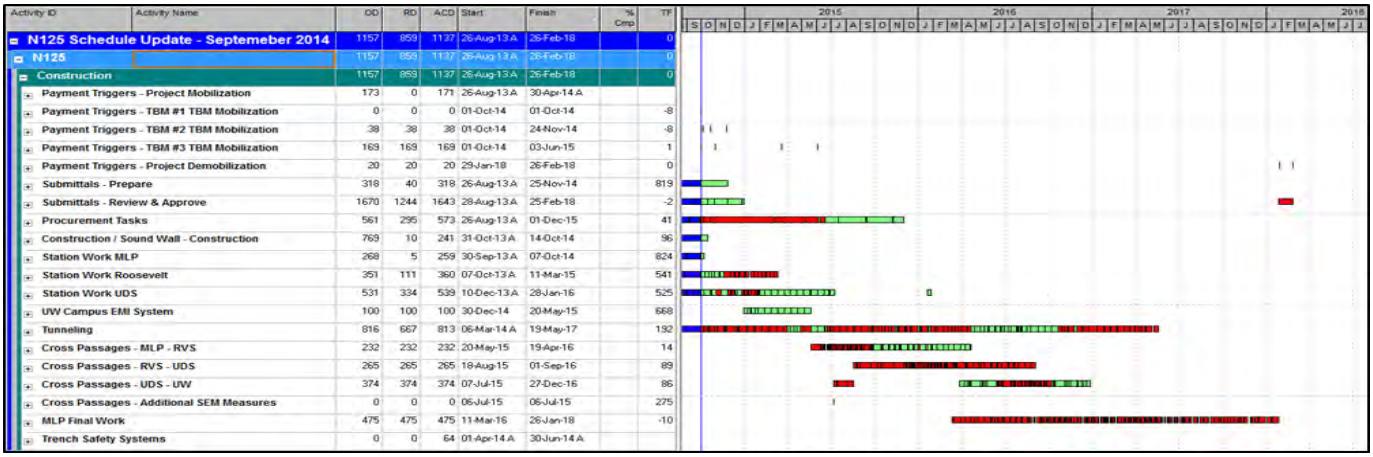
## Current Progress

At the Maple Leaf Portal, TBM No. 1 was idled for the month of September to allow installation of the surge hopper, cross conveyor, and for completion of TBM No. 2. A total of 325 rings had been placed. TBM No. 2 began final testing & commissioning in preparation for a forecasted launch date of October 29th.

At the Roosevelt Station, Excavation and tie-back installation continues with production below plan. The current production rate is not adequate to allow construction of the base slab prior to arrival of the first TBM at Roosevelt Station. Wait time for TBM No. 1 is now 22 working days. Repairs to the slurry wall are ongoing. Restoration work is now underway at Weedin Place. Due to the current pace of tunneling, the schedule now forecasts a negative 19 days of float in reaching Milestone No. 2 Roosevelt Station Turnover.

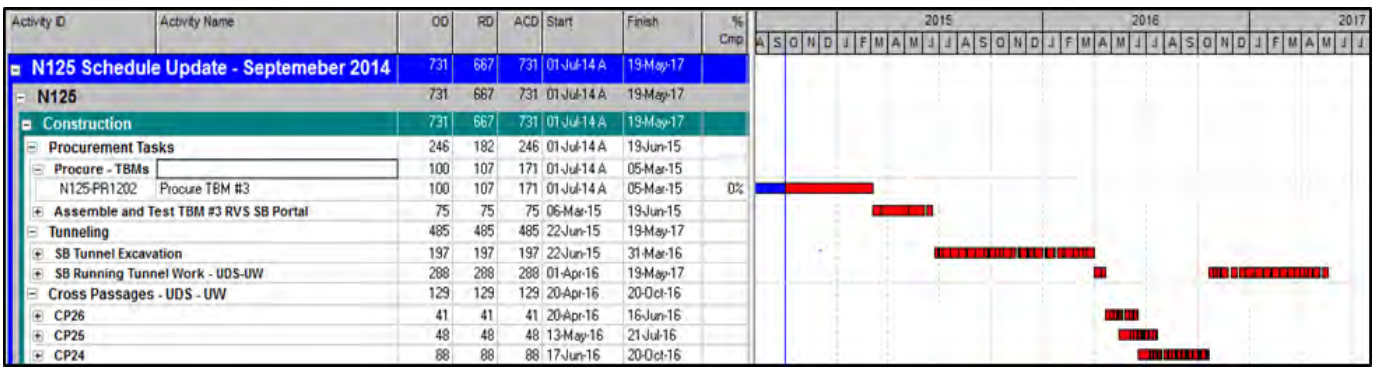
At U District Station, Excavation and installation of lagging & tie-backs continues. Installation of the supporting struts and wales is underway. Site power has been completed and energized. The 1600amp vault has been poured. Milestone No. 5 UDS Turnover is currently forecast to be achieved 20 days behind schedule, driven by the preparation of TBM No. 3 for use.

## Schedule/Critical Path



| Activity ID | Activity Name | OD | RD | ACD | Start | Finish | % Cmp | TF |
|---|---|---|---|---|---|---|---|---|
| N125 Schedule Update - Septemeber 2014 | | 1157 | 859 | 1137 | 26-Aug-13 A | 28-Feb-18 | | 0 |
| N125 | | 1157 | 859 | 1137 | 26-Aug-13 A | 28-Feb-18 | | 0 |
| Construction | | 1157 | 859 | 1137 | 26-Aug-13 A | 28-Feb-18 | | 0 |
| Payment Triggers - Project Mobilization | | 173 | 0 | 171 | 26-Aug-13 A | 30-Apr-14 A | | |
| Payment Triggers - TBM #1 TBM Mobilization | | 0 | 0 | 0 | 01-Oct-14 | 01-Oct-14 | | -8 |
| Payment Triggers - TBM #2 TBM Mobilization | | 38 | 38 | 38 | 01-Oct-14 | 24-Nov-14 | | -8 |
| Payment Triggers - TBM #3 TBM Mobilization | | 169 | 169 | 169 | 01-Oct-14 | 03-Jun-15 | | 1 |
| Payment Triggers - Project Demobilization | | 20 | 20 | 20 | 29-Jan-18 | 26-Feb-18 | | 0 |
| Submittals - Prepare | | 318 | 40 | 318 | 26-Aug-13 A | 25-Nov-14 | | 819 |
| Submittals - Review & Approve | | 1670 | 1244 | 1643 | 28-Aug-13 A | 25-Feb-18 | | -2 |
| Procurement Tasks | | 561 | 295 | 573 | 26-Aug-13 A | 01-Dec-15 | | 41 |
| Construction / Sound Wall - Construction | | 769 | 10 | 241 | 31-Oct-13 A | 14-Oct-14 | | 96 |
| Station Work MLP | | 268 | 5 | 259 | 30-Sep-13 A | 07-Oct-14 | | 824 |
| Station Work Roosevelt | | 351 | 111 | 360 | 07-Oct-13 A | 11-Mar-15 | | 541 |
| Station Work UDS | | 531 | 334 | 539 | 10-Dec-13 A | 28-Jan-16 | | 525 |
| UW Campus EMI System | | 100 | 100 | 100 | 30-Dec-14 | 20-May-15 | | 668 |
| Tunneling | | 816 | 667 | 813 | 06-Mar-14 A | 19-May-17 | | 192 |
| Cross Passages - MLP - RVS | | 232 | 232 | 232 | 20-May-15 | 19-Apr-16 | | 14 |
| Cross Passages - RVS - UDS | | 265 | 265 | 265 | 18-Aug-15 | 01-Sep-16 | | 89 |
| Cross Passages - UDS - UW | | 374 | 374 | 374 | 07-Jul-15 | 27-Dec-16 | | 86 |
| Cross Passages - Additional SEM Measures | | 0 | 0 | 0 | 06-Jul-15 | 06-Jul-15 | | 275 |
| MLP Final Work | | 475 | 475 | 475 | 11-Mar-16 | 26-Jan-18 | | -10 |
| Trench Safety Systems | | 0 | 0 | 64 | 01-Apr-14 A | 30-Jun-14 A | | |

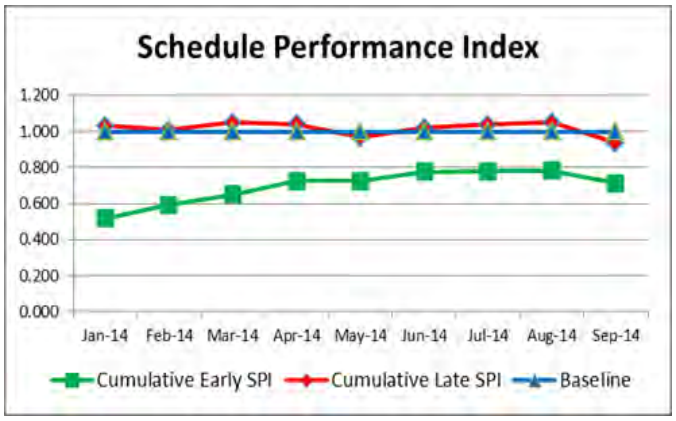
The critical path as illustrated below has shifted this period from the excavation of the Roosevelt Station Box to the procurement of TBM No. 3. The current Forecast At Completion Duration for the procurement of TBM No. 3 is 171 working days, which is 71 days (3.55 months) over the Original Duration of 100 days. Tunneling of the southbound bore continues to drive a negative 12 day path from the launch of TBM No. 2 to arrival at UW Station. The launch of TBM No. 2 has been pushed back by the Contractor and is now forecast for the last week in October.



| Activity ID | Activity Name | OD | RD | ACD | Start | Finish | % Cmp |
|---|---|---|---|---|---|---|---|
| N125 Schedule Update - Septemeber 2014 | | 731 | 667 | 731 | 01-Jul-14 A | 19-May-17 | |
| N125 | | 731 | 667 | 731 | 01-Jul-14 A | 19-May-17 | |
| Construction | | 731 | 667 | 731 | 01-Jul-14 A | 19-May-17 | |
| Procurement Tasks | | 246 | 182 | 246 | 01-Jul-14 A | 19-Jun-15 | |
| Procure - TBMs | | 100 | 107 | 171 | 01-Jul-14 A | 05-Mar-15 | |
| N125-PR1202 | Procure TBM #3 | 100 | 107 | 171 | 01-Jul-14 A | 05-Mar-15 | 0% |
| Assemble and Test TBM #3 RVS SB Portal | | 75 | 75 | 75 | 06-Mar-15 | 19-Jun-15 | |
| Tunneling | | 485 | 485 | 485 | 22-Jun-15 | 19-May-17 | |
| SB Tunnel Excavation | | 197 | 197 | 197 | 22-Jun-15 | 31-Mar-16 | |
| SB Running Tunnel Work - UDS-UW | | 288 | 288 | 288 | 01-Apr-16 | 19-May-17 | |
| Cross Passages - UDS - UW | | 129 | 129 | 129 | 20-Apr-16 | 20-Oct-16 | |
| CP26 | | 41 | 41 | 41 | 20-Apr-16 | 16-Jun-16 | |
| CP25 | | 48 | 48 | 48 | 13-May-16 | 21-Jul-16 | |
| CP24 | | 88 | 88 | 88 | 17-Jun-16 | 20-Oct-16 | |

## Schedule Performance Index

The SPI for September 2014 is 0.71, down from the 0. 78 reported in August. Performance fell below the late curve. Production was anticipated to be lower this period due to the planned stoppage of TBM No. 1. However, delaying the start of TBM No. 2, as well as the longer than planned completion of TBM No. 3 procurement, has negatively impacted the schedule. As a consequence of the negative float contained in JCM's September schedule update, the schedule has been rejected by ST and returned to the Contractor. Sound Transit will now require the Contractor to provide a Recovery Schedule.




## Key Activities

Current Period

- CSI continued casting segment rings – 47.5% have been produced.

*Maple Leaf Portal (MLP)*

- Continued mining TBM No. 1 with progress to date – 325 rings.

*Roosevelt Site (RVS)*

- Continued shaft excavation and installation of tie-backs.
- Completed installation of haul bridge overhang decks and poured bridge beam stops. Began barrier walls.

*U District Site (UDS)*

- Continued excavation, installation of lagging and tie-backs (approximately 22,530 out of 126,432 cubic yards of soil have been excavated to date).
- Completed installation of north end struts and began installation of central section of wales.
- Continued development of dewatering wells and install of header pipe, pumps and electrical.

Next Period

- Continue casting production segment rings.
- Recommence mining with TBM#1.
- Complete testing and launch TBM#2.
- At RVS, continue shaft excavation and tie-back installation and continue external dewatering pumping operation and continue installing haul bridge barrier walls.
- At UDS, continue excavation of shaft and installation of tie-backs; continue to install central struts and wales; complete installation of dewatering pumps & electrical work and begin step pump tests; and begin south end bridge abutments concrete work.

## Closely Monitored Issues

- JCM remains behind schedule on the excavation and tie-back work at RVS. A second shift night time work at RVS has been requested by JCM and is under review by Sound Transit.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***N125Contractor - JCM Northlink*** | |
| Original Contract Value | $440,321,000 |
| Change Order Value | $ 1,314,255 |
| Current Contract Value | $441,635,255 |
| Total Actual Cost (Incurred to date) | $143,307,291 |
| Financial Percent Complete: | 32% |
| Physical Percent Complete: | 32% |
| Authorized Contingency | $22,016,050 |
| Contingency Drawdown | $ 1,314,255 |
| Contingency Index | 5.43 |

*Drilling tiebacks at 30 feet below the ground surface of the RVS shaft.*

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## Scope

The Lynnwood Link Extension Project entails the identification and evaluation of transit alternatives between Northgate in the City of Seattle to Lynnwood in Snohomish County with service in the cities of Shoreline and Mountlake Terrace. Consistent with FTA New Starts requirements, the project has undergone an Alternative Analysis, completed in the 3rd QTR 2011 and Environmental Scoping, completed in the 4th QTR 2011. Development of the Conceptual Engineering and Draft EIS concluded in 2013. In November 2013, the Sound Transit Board identified the preferred route and station alternatives for the Final EIS.

*Map of Lynnwood Link Extension route and station alternatives.*

## Key Project Activities

- Phase 3 (Final EIS and Preliminary Engineering) began in December 2013.
- Preparing for Final EIS and completion in 1st QTR 2015.
- Preparing application for FTA New Starts Engineering phase authority.

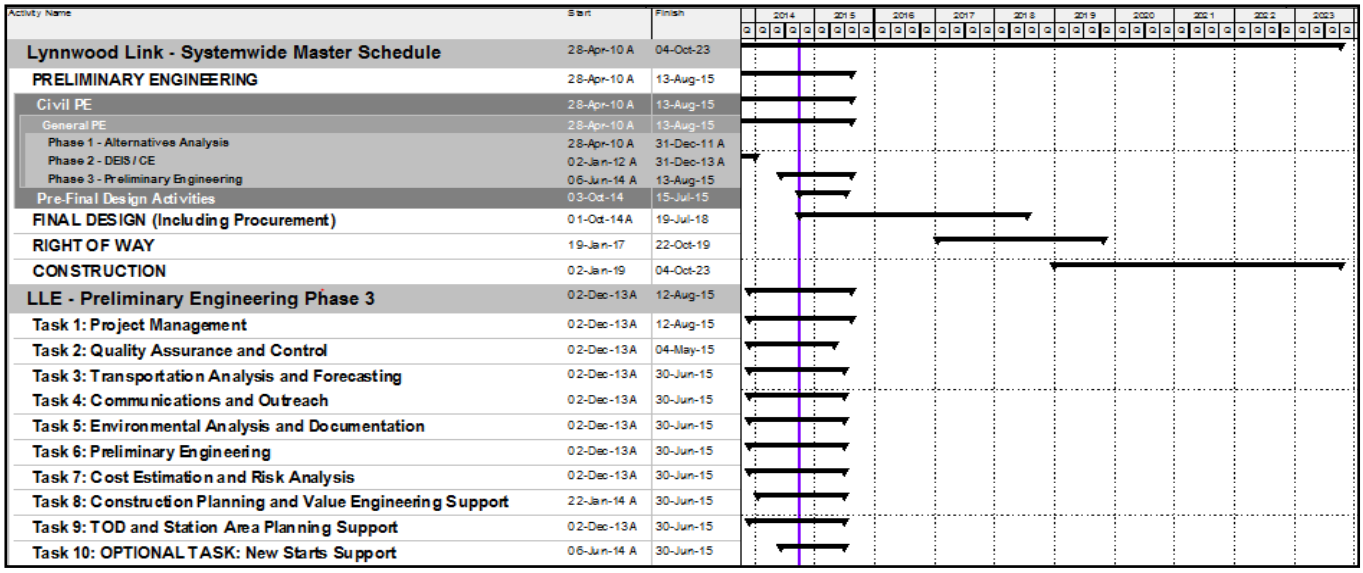
## Project Cost Summary

The Lynnwood Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation. Board approval for additional funding for final design and construction will be sought upon completion of PE. Table (below) figures in millions.

| Phase | Adopted Budget | Commitment to Date | Incurred to Date | Forecasts and Trends | Estimated Final Cost (EFC) | Budget Versus EFC |
|---|---|---|---|---|---|---|
| Administration | $10.7 | $4.0 | $4.3 | $6.8 | $10.7 | $0.0 |
| Preliminary Engineering | $44.3 | $37.9 | $29.1 | $6.5 | $44.3 | $0.0 |
| 3rd Party Agreements | $1.0 | $0.8 | $0.2 | $0.2 | $1.0 | $0.0 |
| Right of Way | $1.1 | $0.4 | $0.3 | $0.6 | $1.1 | $0.0 |
| **Total** | **$57.1** | **$43.0** | **$34.0** | **$14.1** | **$57.1** | **$0.0** |

## Project Schedule

The Lynnwood Link Extension, environmental documentation and preliminary engineering is anticipated to be completed in 2015. The project schedule is presented below.



| Activity Name | Start | Finish |
|---|---|---|
| Lynnwood Link - Systemwide Master Schedule | 28-Apr-10 A | 04-Oct-23 |
| PRELIMINARY ENGINEERING | 28-Apr-10 A | 13-Aug-15 |
| Civil PE | 28-Apr-10 A | 13-Aug-15 |
| General PE | 28-Apr-10 A | 13-Aug-15 |
| Phase 1 - Alternatives Analysis | 28-Apr-10 A | 31-Dec-11 A |
| Phase 2 - DEIS / CE | 02-Jan-12 A | 31-Dec-13 A |
| Phase 3 - Preliminary Engineering | 06-Jun-14 A | 13-Aug-15 |
| Pre-Final Design Activities | 03-Oct-14 | 15-Jul-15 |
| FINAL DESIGN (Including Procurement) | 01-Oct-14 A | 19-Jul-18 |
| RIGHT OF WAY | 19-Jan-17 | 22-Oct-19 |
| CONSTRUCTION | 02-Jan-19 | 04-Oct-23 |
| LLE - Preliminary Engineering Phase 3 | 02-Dec-13 A | 12-Aug-15 |
| Task 1: Project Management | 02-Dec-13 A | 12-Aug-15 |
| Task 2: Quality Assurance and Control | 02-Dec-13 A | 04-May-15 |
| Task 3: Transportation Analysis and Forecasting | 02-Dec-13 A | 30-Jun-15 |
| Task 4: Communications and Outreach | 02-Dec-13 A | 30-Jun-15 |
| Task 5: Environmental Analysis and Documentation | 02-Dec-13 A | 30-Jun-15 |
| Task 6: Preliminary Engineering | 02-Dec-13 A | 30-Jun-15 |
| Task 7: Cost Estimation and Risk Analysis | 02-Dec-13 A | 30-Jun-15 |
| Task 8: Construction Planning and Value Engineering Support | 22-Jan-14 A | 30-Jun-15 |
| Task 9: TOD and Station Area Planning Support | 02-Dec-13 A | 30-Jun-15 |
| Task 10: OPTIONAL TASK: New Starts Support | 06-Jun-14 A | 30-Jun-15 |



## Sound Transit Board Actions

| Board Action | Description | Date |
|---|---|---|
| | *None to report this period.* | |

## Environmental

- Preparing Final EIS for publication in early 2015.

## Community Outreach

- Distributed summary of fair and community festivals participated in the summer which included comments from the public, number of attendees and email sign-ups and recommendations for next year. Also included the Community Drop-in Sessions Summary for the series of community drop-ion sessions.
- Continued supporting field staff completing survey for the environmental review.
- Distributed a project update to email subscribers which provided an overview of outreach completed over the summer.
- Participated in the City of Shoreline station area planning walking tour of the future station in NE 145th and engaged with community members about the project as the group toured the area and listed to updates.
- Continued planning for outreach to potentially impacted property owners and notifications related to the publication of the FEIS in early 2015.

## Phase 3 Preliminary Engineering and Final EIS

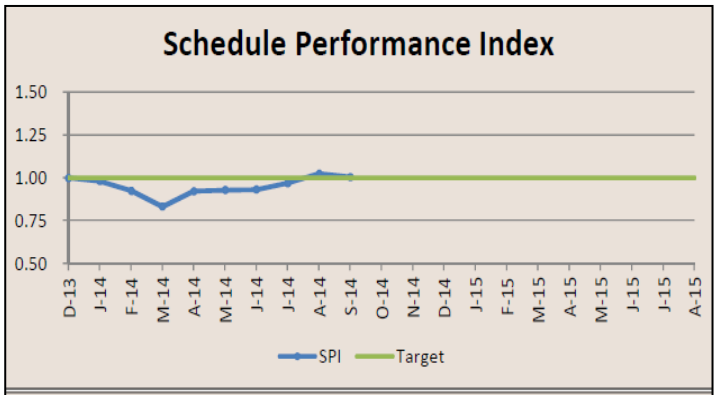
Sound Transit executed a contract amendment for Phase 3, Preliminary Engineering and Final EIS for Lynnwood Link, in December 2013.

## Phase 3 Key Activities

- Completed the draft PE design submittal; continuing to advance the engineering of the preferred alternative.
- Completed the Preliminary FEIS and issued to FTA, FHWA and WSDOT for review.
- Continued development of the work program to obtain FTA New Starts Engineering authority.

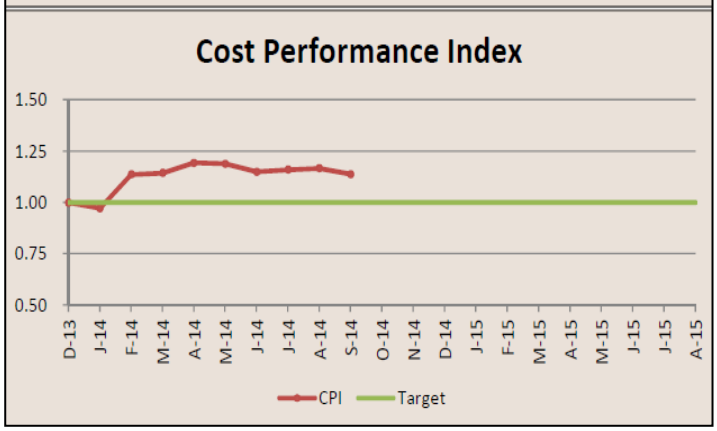
## Phase 3 Schedule Performance

The cumulative Schedule Performance Index (SPI) for Phase 3 is 1.02 through September, indicating work performed to date is slightly higher than the amount originally planned. Critical path work is on schedule and the anticipated Phase 3 completion is unchanged (August 2015).




## Phase 3 Cost Performance

$27.9 M of the total contract amount, approximately 76%, has been spent through September. Phase 3 expenditures through September totaled $11.5 M, approximately 57% of the Phase 3 contract total. The Phase 3 percent complete reported at the end of September is 65%, with an earned value of $13.0 M. The cumulative Cost Performance Index (CPI) through September is 1.14, indicating costs are lower than the budget planned for work accomplished. Based on the current trend, the Phase 3 cost is expected to be within budget.




| Phase 3 Performance | Previous Period | Current Period | Cumulative To-date |
|---|---|---|---|
| Amount Invoiced | $10,265,978 | $1,239,652 | $11,505,630 |
| % Spent | 51% | 6% | 57% |
| Earned Value | $11,973,425 | $1,112,174 | $13,085,599 |
| % Complete | 59% | 6% | 65% |
| **SPI** | **1.02** | **0.84** | **1.01** |
| **CPI** | **1.17** | **0.90** | **1.14** |

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*Map of East Link Extension.*

## Scope

| | |
|---|---|
| **Limits:** | Downtown Seattle to Mercer Island, Bellevue and the Overlake area of Redmond. |
| **Alignment:** | East Link extends light rail 14 miles to East King County from Downtown Seattle serving Mercer Island via I-90, Bellevue and the Overlake area of Redmond, with ten new light rail stations. The alignment configuration includes at-grade, elevated, bridges, new and retrofitted tunnels. |
| **Stations:** | Rainier Ave/I-90, Mercer Island, South Bellevue, East Main, Bellevue Transit Center, Hospital, 120th, 130th, Overlake Village and the Overlake Transit Center (OTC). |
| **Systems:** | Signals, traction power, and communications (SCADA). |
| **Budget:** | $798.3 Million Lifetime Budget through the Final Design Phase. |
| **Phase:** | Final Design |
| **Construction Starts:** | 2016 |
| **Service:** | 2023 |

## Key Project Activities

**Seattle to South Bellevue**

- *Stations*: Street Improvement Permit (SIP) plans for the City of Seattle review are being prepared. Submittal is scheduled for early October.
- *Utilities*: Continued discussions with SCL and PSE regarding electric power supply and routes. A conventional overhead route within street right-of-way is being pursued to supply Mt. Baker TPSS.
- *WSDOT*: A base plan has been prepared to address utilities and landscaping. Meetings on O&M issues are continuing.
- *Track Attachment*: Reviewing various documents including, Basis of Design for the Block and Attachment System; Block and Attachment Design Report. Phase 1 of the Track Attachment testing program is substantially completed. This included base slab construction and Light Weight Concrete Material testing. Phase 2/Stage 1 (Block Manufacturing for electrical testing), and Phase 2/Stage 2, the electrical testing will commence at the end of September 2014.

## Key Project Activities

**Seattle to South Bellevue, continued**

- *Floating Bridge*: A sensitivity analysis has been performed on the initial wind and wave results and discussed with WSDOT. Additional analyses were conducted. A study for wind probabilities and frequencies has been submitted, and will be reviewed with WSDOT in October. Scope for bolt replacement design has been reviewed. A report for the OCS Attachments was submitted.
- *R8A Stage 3A*: (HOV Ramp Connection from I-90 center roadway to Bellevue Way) Construction continues and is approximately 20% complete.
- Continued coordination with King County Metro, Mercer Island, and WSDOT for I-90 Corridor transit integration.
- Coordinating with WSDOT on R8A Stage 3 construction procurement. Bids due in late October.

**South Bellevue to Redmond**

- Working with City of Redmond on the following: their proposed staffing for East Link Expedited Permit and Staffing Reimbursement agreement; and on final approval of a master planned development for the Overlake area of East Link. Council action anticipated in October.
- Continued working through WSDOT's design approval process for E320 and E335.
- Request for Qualifications for E360 Design Build teams advertised on 8/26. SOQs due October 3. Continued RFP Civil design coordination with Redmond, WSDOT, KCM, and Microsoft.
- 90% submittal for E320 is being distributed for ST and 3rd Party reviews. Briefing regarding the 90% submittal to be held with Bellevue and ST reviewers.
- ST/HJH addressing 90% comments for E330, 60% review comments on E335, and 90% review comments for E340.
- E330 design on schedule for 100% submittal on October 20.
- Continued working with the private/franchise utilities to develop the design for utility relocations on BWSE, 112th SE, 16th, and 136th Place, etc.
- ST and affected utilities (PSE and Frontier) working to finalize agreements related to the relocations in E360.
- Continued working with City of Bellevue Staff in support of the Citizen Advisory Committee Review of Design and Mitigation Permit applications.

## Project Cost Summary

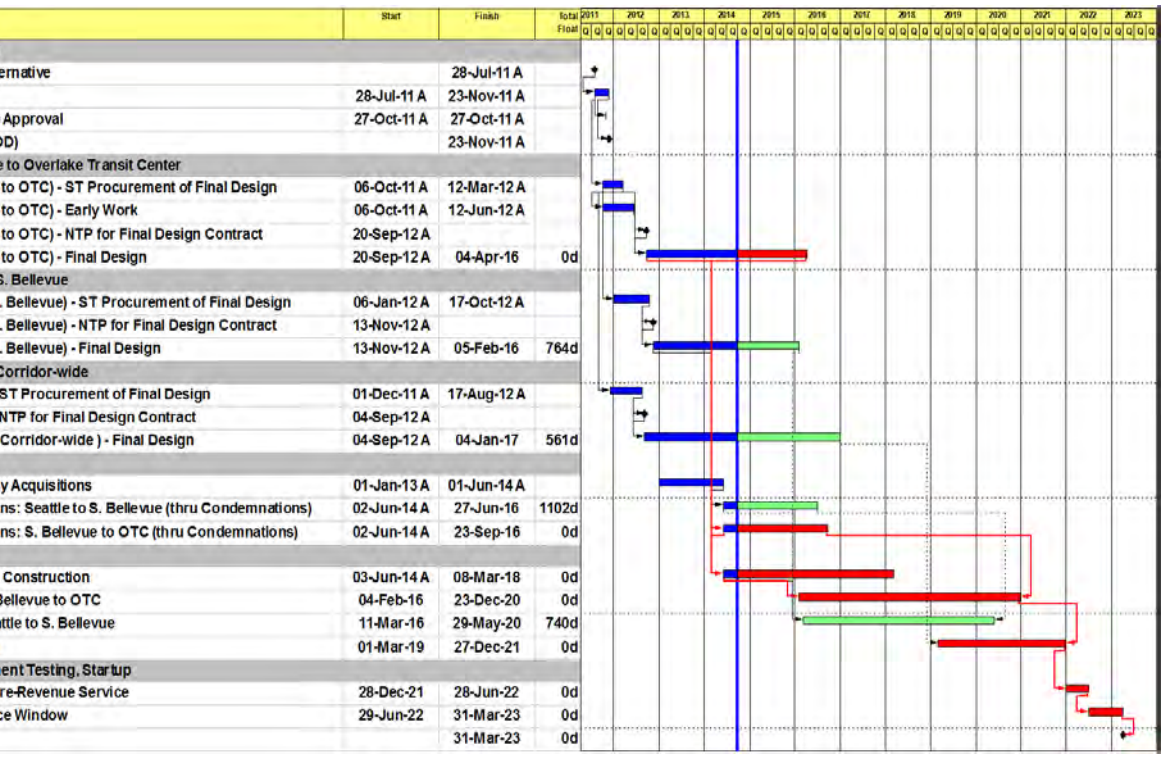
The following table summarizes the cost information for the East Link Extension. Lifetime Budget reflects the project budget adopted by Sound Transit Board, which includes budget through the Final Design Phase.

| | Lifetime Budget | Commit-ment to Date | Incurred to Date | Forecasts and Trends | Estimated Final Cost (EFC) | Budget vs. EFC |
|---|---|---|---|---|---|---|
| Administration | $68.1 | $26.3 | $28.5 | $41.8 | $68.1 | $0.0 |
| Preliminary Engineering | $56.6 | $54.3 | $53.7 | $2.3 | $56.6 | $0.0 |
| Final Design | $232.6 | $151.0 | $110.4 | $81.6 | $232.6 | $0.0 |
| Construction Services | $11.0 | $0.0 | $0.0 | $11.0 | $11.0 | $0.0 |
| 3rd Party Agreements | $40.6 | $6.1 | $3.1 | $34.5 | $40.6 | $0.0 |
| Construction | $24.0 | $12.4 | $3.7 | $11.6 | $24.0 | $0.0 |
| Right-of-way | $365.4 | $49.1 | $44.7 | $316.3 | $365.4 | $0.0 |
| **Total** | **$798.3** | **$299.2** | **$244.2** | **$499.1** | **$798.3** | **$0.0** |

## Project Schedule

The East Link Extension is in Final Design. Revenue Service to the Overlake Transit Center is forecast for 2023. Contract packaging and sequencing of construction continues to be refined. E335 GC/CM (Downtown Bellevue to Spring District); and Bellevue Segment CMC Contract was awarded. E360 Design Build contract procurement is planned to be advertised in the 4th QTR 2014.

| Activity Name | Start | Finish | Total Float |
|---|---|---|---|
| Preliminary Engineering | | | |
| ST Adopt Preferred Alternative | | 28-Jul-11 A | |
| Submit for ROD | 28-Jul-11 A | 23-Nov-11 A | |
| ST Board - Phase Gate Approval | 27-Oct-11 A | 27-Oct-11 A | |
| Record of Decision (ROD) | | 23-Nov-11 A | |
| Final Design - S. Bellevue to Overlake Transit Center | | | |
| Package 1 (S. Bellevue to OTC) - ST Procurement of Final Design | 06-Oct-11 A | 12-Mar-12 A | |
| Package 1 (S. Bellevue to OTC) - Early Work | 06-Oct-11 A | 12-Jun-12 A | |
| Package 1 (S. Bellevue to OTC) - NTP for Final Design Contract | 20-Sep-12 A | | |
| Package 1 (S. Bellevue to OTC) - Final Design | 20-Sep-12 A | 04-Apr-16 | 0d |
| Final Design - Seattle to S. Bellevue | | | |
| Package 2 (Seattle to S. Bellevue) - ST Procurement of Final Design | 06-Jan-12 A | 17-Oct-12 A | |
| Package 2 (Seattle to S. Bellevue) - NTP for Final Design Contract | 13-Nov-12 A | | |
| Package 2 (Seattle to S. Bellevue) - Final Design | 13-Nov-12 A | 05-Feb-16 | 764d |
| Final Design - Systems, Corridor-wide | | | |
| Package 3 (Systems) - ST Procurement of Final Design | 01-Dec-11 A | 17-Aug-12 A | |
| Package 3 (Systems) - NTP for Final Design Contract | 04-Sep-12 A | | |
| Package 3 (Systems & Corridor-wide ) - Final Design | 04-Sep-12 A | 04-Jan-17 | 561d |
| Right of Way | | | |
| Early Work Right of Way Acquisitions | 01-Jan-13 A | 01-Jun-14 A | |
| Right of Way Acquisitions: Seattle to S. Bellevue (thru Condemnations) | 02-Jun-14 A | 27-Jun-16 | 1102d |
| Right of Way Acquisitions: S. Bellevue to OTC (thru Condemnations) | 02-Jun-14 A | 23-Sep-16 | 0d |
| Construction | | | |
| Procurements for Civil Construction | 03-Jun-14 A | 08-Mar-18 | 0d |
| Civil Construction: S. Bellevue to OTC | 04-Feb-16 | 23-Dec-20 | 0d |
| Civil Construction: Seattle to S. Bellevue | 11-Mar-16 | 29-May-20 | 740d |
| Systems Construction | 01-Mar-19 | 27-Dec-21 | 0d |
| Final Acceptance, Alignment Testing, Startup | | | |
| Startup, Testing, and Pre-Revenue Service | 28-Dec-21 | 28-Jun-22 | 0d |
| Project Revenue Service Window | 29-Jun-22 | 31-Mar-23 | 0d |
| Project Complete | | 31-Mar-23 | 0d |




*Note: Dates tracked are contractual baseline dates with the exception of the Package 2 - Final Design which is showing forecasted date that is currently being negotiated. Project baselining is scheduled to occur in the 1st QTR 2015, at which time the dates shown will all be baseline dates.*

*South entry of South Bellevue Station at 60% design.*

## Right of Way

The East Link Extension involves the acquisition of a range of property interests including fee acquisitions for stations, guideway, staging areas, support facilities, and tunnel and guideway easements as well as permanent and temporary easements for construction. These acquisitions will result in owner and tenant residential and commercial relocations. The East Link Extension included the advance acquisition of approximately one mile of an existing railroad parcel ("Bellevue Mile") that the Sound Transit Board approved in June 2011. The right-of-way program status for this period is summarized in the following table. Market value trends in both residential and commercial properties are exhibiting strong upward pressure. Appraisals are being adjusted to reflect this increasing trend in the market. The overall impact on the Right-of-Way budget is being closely monitored.

| East Link Extension Property Acquisition Status | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Line Section** | **Board Approved** | **Offers Made** | **Signed Agreements** | **Possession and Use** | **Closings to date** | **Baseline Relocations Required** | **Relocations Completed** |
| Seattle to S. Bellevue | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| S. Bellevue to OTC | 233 | 74 | 2 | 0 | 51 | 215 | 40 |
| Bellevue Mile | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| **Total** | **234** | **75** | **3** | **0** | **52** | **215** | **40** |

*In an effort to clearly track the individual parcels as they directly relate to each individual project segment or multiple segments, the report has been modified to reflect those parcels that fall into the multiple segment category. Therefore, 19 parcels were removed from E320 and placed into the E330/E335 segment and 26 parcels were removed from E330 and placed in the E330/E335 segment.*

Status of the City of Bellevue parcels are found in the "Board Approved" column.

**Seattle to S. Bellevue**

*E110 IDS Rail Connection Upgrades* - No new activity.

**S. Bellevue to OTC parcels**

*E130 I-90/E320 S. Bellevue*– No new activity.

*E320* - One parcel closed.

*E330 Downtown Bellevue /E335 Downtown Bellevue to Spring District* – One parcel closed.

*E335* – No new activity.

*E340 Bel-Red* - One offer made and one parcel de-certified.

*E360 SR 520 to OTC* – No new activities.

## Quality Assurance Activities

Activities

- Material Review Board disposition 1 RFD for reversed super elevation curves and a minimum horizontal tangent length on the westbound track south of the South Bellevue Station.

Issues

- None to report.

| Description | Sep 2014 | Notes |
|---|---|---|
| No. of Audits Planned | 3 | E330 100%, E110 90%, E130 90% Submittals |
| No. of Audits Completed | 0 | None |
| Reports in Progress | 0 | None |
| No. of Audits Postponed | 0 | None |

## Environmental

- Developing environmental permit application packages. Environmental commitments are being incorporated into the design, program, and specifications of the project.

## Sound Transit Board Actions

| Board Action | Description | Date |
|---|---|---|
| *R2014-22* | *Amended the Adopted 2014 Budget for the Overlake Village Bridge Project to a) increase the Project Lifetime Budget from $1,897,585 to $5,185,585 and: b) increase the 2014 Annual Budget from $782,000 to $1,372,847 for Overlake Village improvements being funded by the City of Redmond under an agreement between Sound Transit and Redmond.* | *Sep 25* |
| *M2014-61* | *Acquire certain real property interests including acquisition by condemnation, and to reimburse eligible relocation and reestablishment expenses incurred by affected owners and tenants as necessary for the project.* | *Sep 25* |

## Community Outreach

- Held the Bel-Red 90% design Open House at Highland Community Center with approximately 65 attendees.
- Finalized Mercer island 60% public involvement summary and published it to the East Link website.
- Held the Mercer Island/Sound Transit parking outreach kick-off meeting.
- Published the E-newsletter to approximately 6,000 subscribers recapping the Bel-Red Open House and advertising the Rainier and I-90 Transit Integration Public Involvement Summaries. Field work coordination and notification of the ALTA survey west of East Main Station.
- Continued correspondents with residents behind East Main station regarding current design status and tree preservation efforts.

*Pouring concrete to widen the mainline of Eastbound I-90 in the vicinity of the Bellevue Way off ramp as part of the I-90 Stage 3A HOV project.*

## Construction

I-90

- Continued I-90 (Stage 3A) HOV ramp construction.
- I-90 Stage 3 (adding HOV lanes on outer roadway between Mercer Island and Seattle) procurement underway.
- I-90 Construction management Services Request for Qualification (RFQ) in development.

Bellevue-Redmond

- Bellevue Segment Construction Management Services (for preconstruction services), contract awarded.
- E335 GC/CM procurement in progress.

## Final Design Scope

Final Design for the East Link Extension includes three major design contracts: two for civil improvements and one for systems improvements. This contract is for civil and architectural design services from South Bellevue to the Overlake Transit Center (OTC). The contract was awarded to H-J-H Final Design Partners, a joint venture of HNTB Corporation, Jacobs Engineering Group, Inc., and Hatch Mott MacDonald.

The scope of H-J-H services includes detailed designs of the corridor, preparation of comprehensive construction contract documents, permitting support, surveying, geotechnical investigations, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support and community outreach.

The design is being grouped into five Contract Packages: (1) E320 South Bellevue; (2) E330 Downtown Bellevue Tunnel; (3) E335 Downtown Bellevue to Spring District; (4) E340 Bel-Red, and (5) E360 SR-520 to OTC.

*Map of South Bellevue to the Overlake Transit Center in Redmond.*

## Final Design Key Activities

**E320 So. Bellevue**

- Submitted 90% design documentation with full QC.
- Continued traffic signal design for the new signal at 112th Ave SE and SE 15th St, including coordination of foundation design.
- Developed second draft of two WSDOT project analyses, one design deviation, and an intersection control analysis for review by WSDOT and FHWA. Conducted three over-the-shoulder review meetings with WSDOT and FHWA.

**E330 Downtown Bellevue/E335 Downtown Bellevue to Spring District**

- Completed 100% drawings and specifications to address comments and prepare for 100% QC lock.
- Advanced SEM Tunnel Utility Assessment report. Addressed comments on SEM Tunnel impacts upon adjacent building basements.
- Completed analysis of existing trees within E330 contract limits for civil coordination.

**E335 Downtown Bellevue to Spring District**

- Continued to hold the stations design until GC/CM is on board.
- Submitted a revised WSDOT Design Approval Memorandum to address comments received on the draft submittal.
- Evaluated tree survey and data against site conditions and coordinated resolution of discrepancies.

**E340 Bel-Red**

- Began incorporation of the accepted 90% comment responses into 100% plans, documents, and specifications.
- Continued the private utility design. Continued relocation coordination process with Puget Sound Energy and Olympic Pipeline. Refined the wetland sanitary sewer and storm water relocations at the Kelsey Creek mitigation site.
- Coordinated with the system design team (LTK) and Sound Transit on the revised overhead contact system pole locations on aerial guideway.

**E360 SR 520 to OTC**

- Began incorporating changes to Overlake Transit Center site for NE 40th St path and bus loop.
- Coordinated with Sound Transit and WSDOT regarding future WSDOT work at 148th Ave NE and forward compatibility.
- Began incorporating NE 51st St staging area.

## Final Design Schedule

The table below shows the design submittal dates for each of the contract.

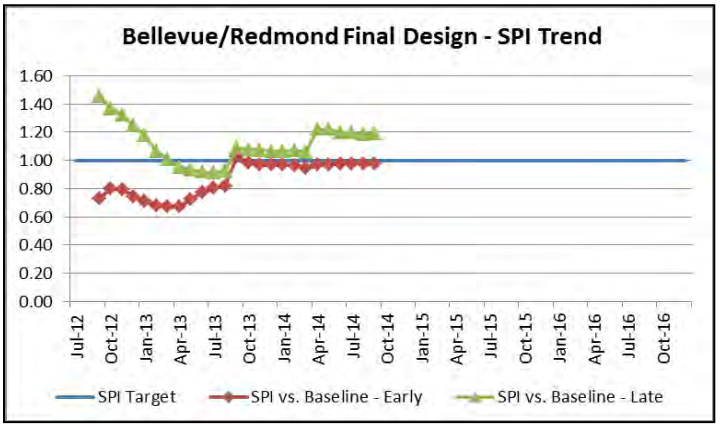
| Contract Packages | 60% Submittal | | 90% Submittal | | 100% Submittal | | IFB Submittal | |
|---|---|---|---|---|---|---|---|---|
| | Baseline* | Forecast/ Actual | Baseline* | Forecast/ Actual | Baseline* | Forecast/ Actual | Baseline* | Forecast/ Actual |
| E320 So. Bellevue | 12/06/2013 | 12/06/2013 | 9/10/2014 | 9/19/2014 | 2/6/2015 | 2/06/2015 | 5/18/2015 | 5/18/2015 |
| E330 Downtown Bellevue Tunnel | 11/18/2013 | 11/18/2013 | 6/02/2014 | 6/02/2014 | 10/20/2014 | 10/20/2014 | 1/28/2015 | 1/28/2015 |
| E335 Downtown Bellevue to Spring District | 12/20/2013 | 12/20/2013 | 8/10/2015 | 8/10/2015 | 12/29/2015 | 12/29/2015 | 4/4/2016 | 4/4/2015 |
| E340 Bel-Red | 7/15/2013 | 7/15/2013 | 4/04/2014 | 7/21/2014 | 12/8/2014 | 12/8/2014 | 3/13/2015 | 3/13/2015 |

| | Draft RFP Submittal | | Final RFP Submittal | |
|---|---|---|---|---|
| | Baseline* | Forecast/ Actual | Baseline* | Forecast/ Actual |
| E360 SR-520 to OTC | 2/18/2014 | 2/18/2014 | 7/07/2014 | 7/31/2014 |

**Baseline schedule dates revised to reflect final contract packaging and construction delivery methods.*

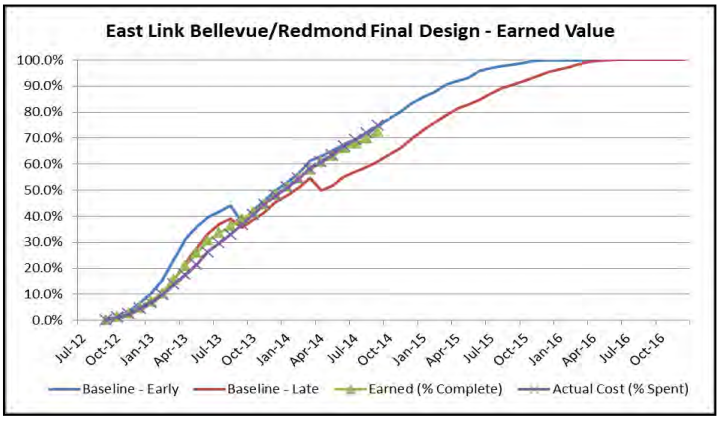
## Final Design Schedule Performance

Excluding Other Direct Expenses (ODC's), Profits and DSDC, the Schedule Performance Index (SPI) reported this period is at 0.97 when measuring against the Early Schedule Baseline, and 1.19 when measuring against the Late Schedule Baseline. E335 design progress is on-hold until the GC/CM contractor is onboard. Forecast submittals for all packages remained the same as the previous period, except for E320 100% (moved to 02/06/2015).

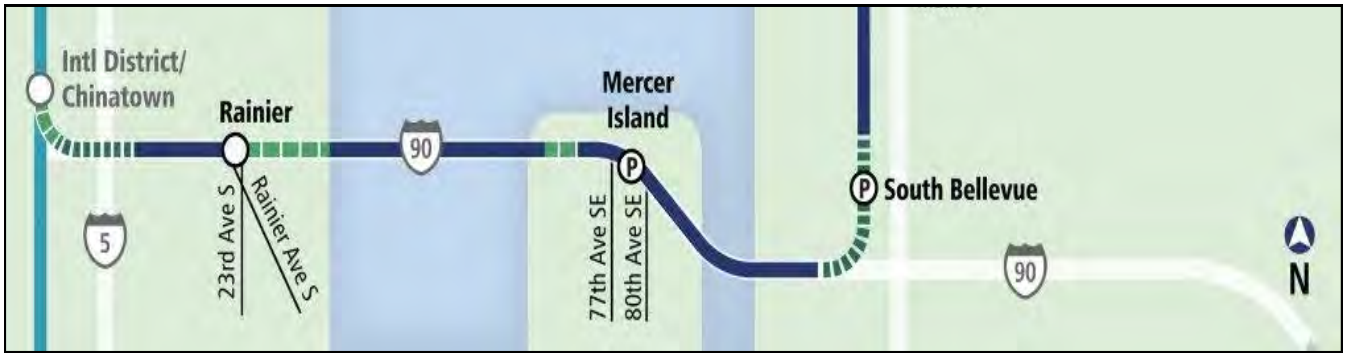



## Final Design Cost Performance

Labor cost (for Phase 2 Final Design) to-date is $56.3 million, or 74.0% of the budget. Progress earned through the same period is approximately 71.5% or $54.6 million of earned value. This yields a cumulative Cost Performance Index (CPI) of approximately 0.97, which indicates good cost efficiency of the current contract budget, including executed change orders. There are upward cost pressures in several areas due to refinements to the design and potentially extension of the contract time. Estimate At Completion (EAC) based on EV data, which does not account for potential change orders, is approximately equal to current budget.




| Performance | Previous Period | Current Period | Cumulative To Date |
|---|---|---|---|
| Labor Amt. Invoiced | $54,146,548 | $2,136,503 | $56,283,051 |
| % Spent | 71.0% | 2.8% | 73.8% |
| Earned Value | $52,483,135 | $2,071,591 | $54,554,726 |
| % Complete | 68.8% | 2.7% | 71.5% |
| CPI | 0.97 | 0.97 | 0.97 |




*Map of International District Station to South Bellevue.*

## Final Design Scope

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This Contract is for the civil and architectural design services from International District Station (IDS) to South Bellevue. The contract was awarded to Parsons Brinkerhoff, Inc. (PB).

The scope of the services includes detailed design of the corridor, preparation of comprehensive construction contract documents, permitting support, surveying, geotechnical investigation, right-of-way planning, third party coordination, systems coordination, cost estimating, scheduling, sustainability report, bid support and community outreach support.

The project in this segment has been grouped into three Contract Packages: (1) E110 Rail Connection and Upgrades at IDS, (2) E120 Seismic Retrofits of WSDOT Structures, (3) E130 I-90 Civil/Architectural, which also includes the two at-grade stations, and Electrical/Mechanical Upgrades to existing Tunnels.

## Final Design Key Activities

- *Trackwork*: A list of deviations under review.
- *Mercer Island Station:* Mercer Island 90% design is ongoing; LLRP presentation held in August 7; continued working with KC Metro to lay out bus stop and turnarounds on 80th Street. Continued coordination with City of Mercer Island.
- *Rainier Avenue Station*: SIP will be submitted to the City of Seattle in November. A site plan is being prepared for Rainier Ave. that includes the removal of the pedestrian bridge and inclusion of a cross walk.
- *Floating Bridge*: Track attachment and OCS pole concept continue to be advanced. Additional stress analysis has been performed to assess modified load combinations.
- *Fixed Spans*: The E120 60% submittal was submitted on September 24.

**Track Bridge**

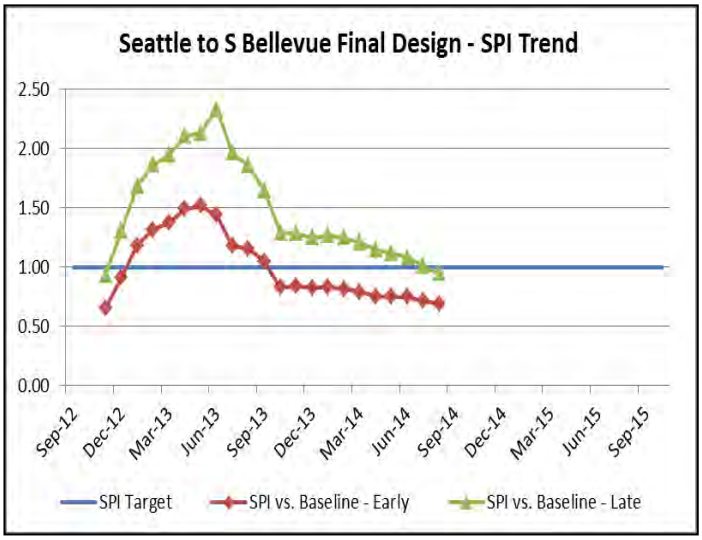
- Phase 2/Stage 1, the electrical testing and Stage 2, structural testing, will commence in October.

## Final Design Schedule

| Contract Packages | 60% Submittal | | 90% Submittal | | 100% Submittal | | IFB Submittal | |
|---|---|---|---|---|---|---|---|---|
| | Baseline | Actual | Baseline | Forecast/ Actual | Baseline | Forecast/ Actual | Baseline | Forecast/ Actual |
| E110 - Rail connection & IDS upgrades | 12/6/2013 | 6/3/2014 | 10/9/2014 | 3/13/2015 | 2/13/2015 | 6/22/2015 | 4/28/2015 | 10/6/2015 |
| E120 - Seismic Retrofits | 11/1/2013 | 9/24/2014 | 1/15/2015 | 7/17/2015 | 3/20/2015 | 11/6/2015 | 4/28/2015 | 2/24/2016 |
| E130 – I-90 Civil/ Arch./Elect. & Mech. Upgrades | 4/4/2014 | 7/11/2014 | 12/17/2014 | 4/15/2015 | 3/25/2015 | 9/15/2015 | 4/29/2015 | 12/15/2015 |

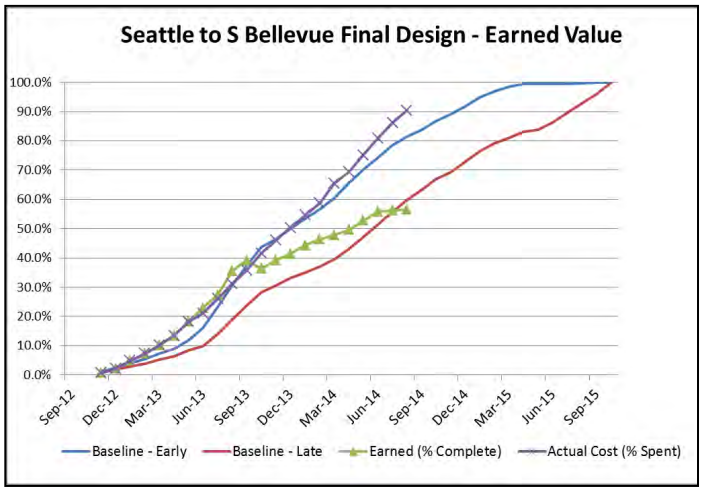
### Final Design Schedule Performance

Schedule Performance continues to indicate the project schedule is slipping; SPI – Early as reported for the August 2014 period is 0.69. The E120 60% Design Submittal was late, due in part to design concurrences from third parties. Without mitigation strategies put into place, impact to the overall schedule is anticipated. A revised baseline design schedule will be submitted once current scope & budget realignment negotiations have been resolved by senior management for ST and the consultant, anticipated 1st QTR 2015. Upon acceptance, baseline milestones will be revised.




### Final Design Cost Performance

Excluding professional fee, labor and Other Direct Costs for Final Design through August 2014 is $23.3 million, or 89.1% of the budget. Cost performance (CPI) continues to trend downward, and remains below the desired 1.00. The current budget includes executed change orders; however, additional upward cost pressure continues in several areas due in part to the addition of a pocket track on the D2 roadway, additional testing to ensure a successful track attachment system, design concurrences from WSDOT, and design changes to Rainier Station. The Estimate at Completion (EAC) continues to trend above the current budget. Senior management for both the consultant and Sound Transit continue to engage in discussions on scope/ budget realignment that include these items; agreement on the final terms is anticipated in February 2015. Ongoing review continues to ensure project completion in a cost-effective and successful manner.




| Performance | Previous Period | Current Period | Cumulative To Date |
|---|---|---|---|
| Amount Invoiced (not include Prof. Fee) | $22,337,622 | $914,935 | $23,252,557 |
| % Spent | 86.1% | 3.5% | 89.6% |
| Earned Value | $14,607,425 | $56,569 | $14,663,994 |
| % Complete | 56.3% | 0.2% | 56.5% |
| **CPI** | **0.65** | **0.06** | **0.63** |

*Table figures in millions.*

## Final Design Scope

Final Design for the East Link Extension is delivered by three major design contracts: two for civil improvements and one for systems improvements. This contract is for the systems design services for the entire alignment. The contract was awarded to LTK Engineering Services, Inc. The scope of the services include detailed design of the corridor, preparations of comprehensive construction contract documents, 3rd party coordination, cost estimating, scheduling, and bid support.

## Final Design Key Activities

- LTK provided ST with final white paper describing the operation of the WSDOT maintenance road crossing. Next step is to present and discuss with WSDOT.
- Compiled Block Diagrams for cathodic protection monitoring for E750 60% design submittal.
- Performed Traction Electrification grounding simulation modelling to determine ground mat sizes.
- Completed service application for Systems equipment within the Seattle City Light region.
- LTK and the ST systems engineers provided updated Segment B Hazard Log for Systems.
- Finalized SE 4th Street Emergency crossing ownership with City of Bellevue.
- LTK provided the systems Project Integration Implementation Plan to ST for approval.

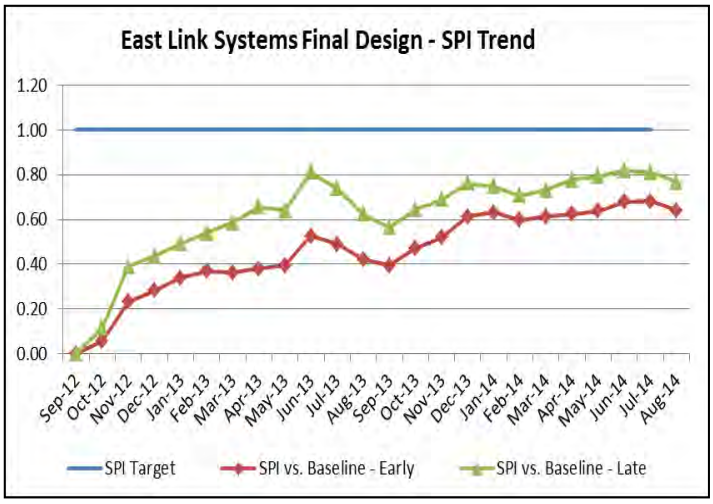
## Final Design Schedule

Though IFB submittal is showing six months behind schedule, there is no impact to the overall schedule.

| | 60% Submittal | | 90% Submittal | | 100% Submittal | | IFB Submittal | |
|---|---|---|---|---|---|---|---|---|
| | Baseline | Forecast/ Actual | Baseline | Forecast/ Actual | Baseline | Forecast/ Actual | Baseline | Forecast/ Actual |
| E750– LRT Systems | 5/16/2014 | 9/25/2014 | 2/2/2015 | 7/8/2015 | 8/20/2015 | 1/28/2016 | 10/21/2015 | 4/22/2016 |

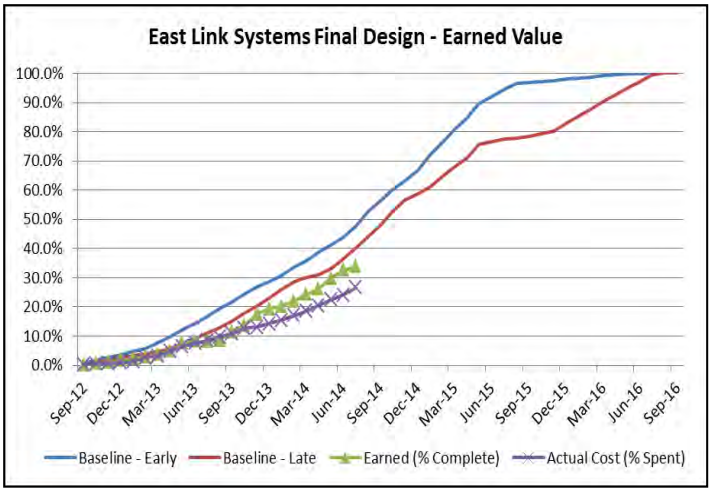
## Final Design Schedule Performance

During the month of August 2014 the project is 33.4% complete resulting in an Earned Value of $5.88M. The project has an early SPI of 0.76 and a late SPI of 0.98 which indicates that the contract is behind schedule. Revisions to the civil design schedules resulted in a delay to the systems deliverables.



## Final Design Cost Performance

Through the end of August 2014 the project has spent approximately 27.7% of the budget resulting in CPI of 1.21. Based on this trend, the current Estimate at Completion (EAC) is expected to be less than the current budget of $18M.




| Performance | Previous Period | Current Period | Cumulative To Date |
|---|---|---|---|
| Labor Amt. Invoiced | $4,451,433 | $425,187 | $4,876,620 |
| % Spent | 25.3% | 2.4% | 27.7% |
| Earned Value | $5,679,689 | $205,281 | $5,884,967 |
| % Complete | 32.2% | 1.2% | 33.4% |
| **CPI** | **1.3** | **0.5** | **1.2** |

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# Link Light Rail
# S. 200th Link Extension

## Scope

**Limits:** South 200th Link Extension consists of 1.6-mile extension of light rail from the SeaTac/Airport Station to South 200th Street.

**Alignment:** The extension continues in an aerial configuration heading south of the existing SeaTac/Airport Station, east of Air Cargo Road across South 188th Street, and continuing south along the east side of 28th Avenue South to the elevated Angle Lake Station located at South 200th Street. A passenger pickup/drop-off area, bus transfer, plaza, and a minimum 700-space structured park and ride facility will be located at Angle Lake Station. Up to 400 additional spaces may be developed for interim parking while Angle Lake Station is the interim southern terminus of the Link system. Guideway/Station and Parking Garage/Plaza are being delivered under a Design Build contract.

**Station:** Angle Lake Station is located at South 200th Street.

**Systems:** Signals, track electrification, and SCADA communications

**Budget:** $383.2 Million

**Service:** September 2016

**Phase:** Final Design and Construction

*Map of S. 200th Link Extension.*

## Key Project Activities

- *Design Build Guideway and Station (S440):* Construction activities continued - erecting segmental spans, column placement, precast segment production at casting yard, and station retaining walls.
- *Design Build Parking Garage (S445):* DB Contractor continued with design development and coordination meetings with ST and RE team. Continued site clearing and prep construction activities. Baseline schedule was approved. Held parking and station media event with public officials. PSE property close to being completed.
- *Military Road/South 200th (S446):* Final design consultant continues to progress with design elements. 60% submittal in review with WSDOT and City of SeaTac.
- *Roadway Improvements (S447):* **):** Final Design Consultant continues to progress with roadwork design, 100% submittal expected mid-October. Continue PSE task order utility relocation work along 28th Ave S.

## Closely Monitored Issues

- City of SeaTac indicated to Sound Transit the Storm Water codes may require adding detention facilities to the previously approved Storm Water IFC and permitted design in reference to the S440 contract. ST advised the City this is outside the scope of the Development and Transit Way Agreement and their request is a betterment. The DB Contractor continues to coordinate with the City to address concerns and code compliance.
- ST is proceeding with emergency work for the City's 54-inch storm drain pipe that has collapsed on 28th Ave South to make the area safe for public. Repair cost will be deducted from future payments to the City. Further discussions between both parties continue.
- Port of Seattle was advised of a potential claim from ST Contractor due to the late column footing design changes; discussion with Port is underway.

## Project Cost Summary

The S. 200th Link Extension project cost is summarized in two cost tables. The first table in in accordance with Sound Transit's Work Breakdown Structure (WBS), and in the second table, cost is summarize in accordance to the FTA's Standard Cost Categories (SCC) format. (Both tables' figures in millions).

| WBS Phase Elements | Baseline Budget | Current Adopted Budget | Commitment to Date* | Incurred to Date | Est. Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| ADMINISTRATION | $16.1 | $15.9 | $8.1 | $8.6 | $15.8 | $0.0 |
| PRELIMINARY ENGINEERING | $5.9 | $5.7 | $5.7 | $5.7 | $5.7 | $0.0 |
| FINAL DESIGN | $20.0 | $9.9 | $8.4 | $7.3 | $9.7 | $0.2 |
| CONSTRUCTION SERVICES | $15.1 | $17.3 | $15.0 | $5.5 | $17.1 | $0.2 |
| 3rd PARTY AGREEMENTS | $6.9 | $7.1 | $5.6 | $2.4 | $7.1 | $0.0 |
| CONSTRUCTION | $275.7 | $283.8 | $213.3 | $102.9 | $263.5 | $20.3 |
| VEHICLES | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| ROW | $43.5 | $43.5 | $41.1 | $35.8 | $43.5 | $0.0 |
| **Capital Total** | **$383.2** | **$383.2** | **$297.1** | **$168.2** | **$362.5** | **$20.7** |
| FINANCE COST | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| **Project Total** | **$383.2** | **$383.2** | **$297.1** | **$168.2** | **$362.5** | **$20.7** |

The overall project Estimated Final Cost (EFC) for this period continues to reflect $362.5M. This period incurred cost increased approximately $5.5M, of this $4.5M was for construction activities. S440 DB Guideway & Station contract was $4.2M, S445 DB Parking Garage contract was $0.3M. Construction services were $0.3M and the remaining expenditures for $0.4M were related to civil final design, third party, ROW and administrative charges.

| Project Elements by SCC | Baseline Budget | Current Adopted Budget | Commitment to Date* | Incurred to Date | Estimated Final Cost (EFC) | Adopted Budget vs. EFC |
|---|---|---|---|---|---|---|
| 10 Guideway & Track Elements | $144.8 | $134.0 | $98.4 | $50.6 | $118.1 | $15.8 |
| 20 Stations | $46.4 | $48.9 | $37.9 | $8.2 | $37.8 | $11.1 |
| 30 Support Facilities: Yards, Shops | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| 40 Sitework & Special Conditions | $34.6 | $49.6 | $39.3 | $18.2 | $53.0 | -$3.4 |
| 50 Systems | $30.8 | $20.1 | $18.6 | $9.6 | $20.1 | $0.0 |
| **Construction Subtotal (SCC 10-50)** | **$256.6** | **$252.6** | **$194.2** | **$86.6** | **$229.1** | **$23.5** |
| 60 Row, Land, Existing Improvements | $43.5 | $43.5 | $41.1 | $35.8 | $43.5 | $0.0 |
| 70 Vehicles | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| 80 Professional Services | $64.1 | $70.9 | $61.9 | $45.8 | $76.2 | -$5.3 |
| 90 Unallocated Contingency | $19.0 | $16.2 | $0.0 | $0.0 | $13.6 | $2.6 |
| **Project Total (SCC 10-90)** | **$383.2** | **$383.2** | **$297.1** | **$168.2** | **$362.5** | **$20.7** |
| **100 Finance Cost** | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| **Project Total (SCC 10-90)** | **$383.2** | **$383.2** | **$297.1** | **$168.2** | **$362.5** | **$0.0** |

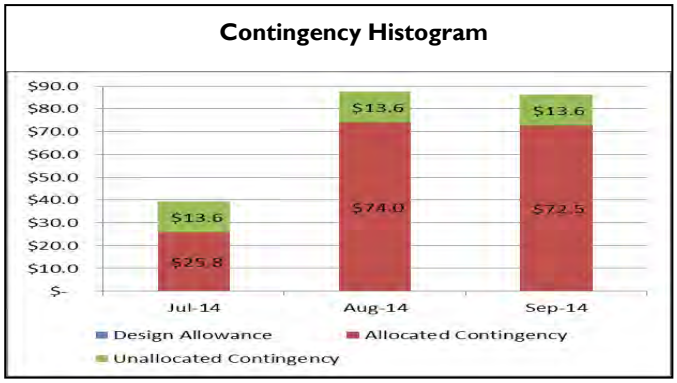
The EFC grouped by SCC is consistent at $362.5M and remains unchanged from last month, indicating remaining work can be achieved under the adopted budget.

## Cost Contingency Management

The overall project contingency balance as of September is $86.1M.

*Design Allowance (DA):* After baselining the project the design allowance of $26.7M was added to the base estimate for the design build work package. There will be no future reporting of DA.
*Allocated Contingency (AC)*: This period the AC shows a current balance of $72.5M.
*Unallocated Contingency (UAC)*: This period the UAC continues to show a current balance of approximately $13.6M.

| Contingency Status | Baseline | | Current | |
|---|---|---|---|---|
| | Amount | % of Total | Amount | % of Work Remaining |
| Design Allowance | $26.7 | 7.0% | $ - | 0.0% |
| Allocated Contingency | $29.8 | 8.0% | $72.5 | 37.3% |
| Unallocated Contingency | $19.0 | 5.0% | $13.6 | 7.0% |
| **Total** | **$75.5** | **20.0%** | **$86.1** | **44.3%** |



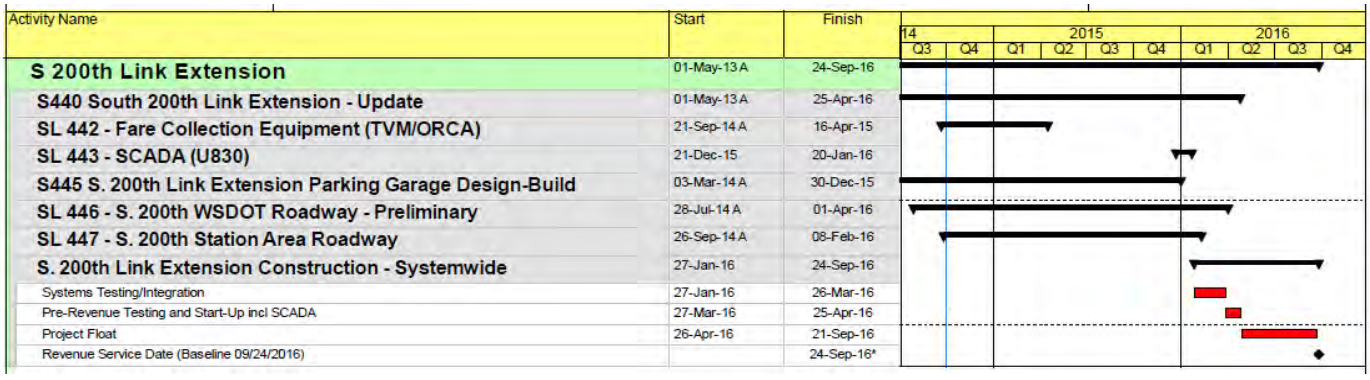

## Risk Management

The South 200th Link Extension Risk Management Plan (RMP) established a risk management and oversight process for assessing and monitoring risks to determine how risks have been reduced or mitigated. RMP captures scope growth, schedule delay, and cost growth risks that could arise during any phase of the project and potentially affect parts of the project scope. On a quarterly basis, the South 200th Link Extension team reviews and updates risk to reflect conditions. Below is a list of the top five major risk review items identified through 3rd QTR 2014:

- *Construction*: Delays due to City of SeaTac electrical inspections (S440).
- *Third Party:* Port of Seattle changing rules of engagement on their property after DB contract awarded (S440).
- *Construction:* Integrating all the various System and Station components.
- *Construction*: Delays due to L&I inspections and Certificate of Occupancy for elevators (S440 and S445).
- *Construction*: Inconsistent application of quality management process (S440).

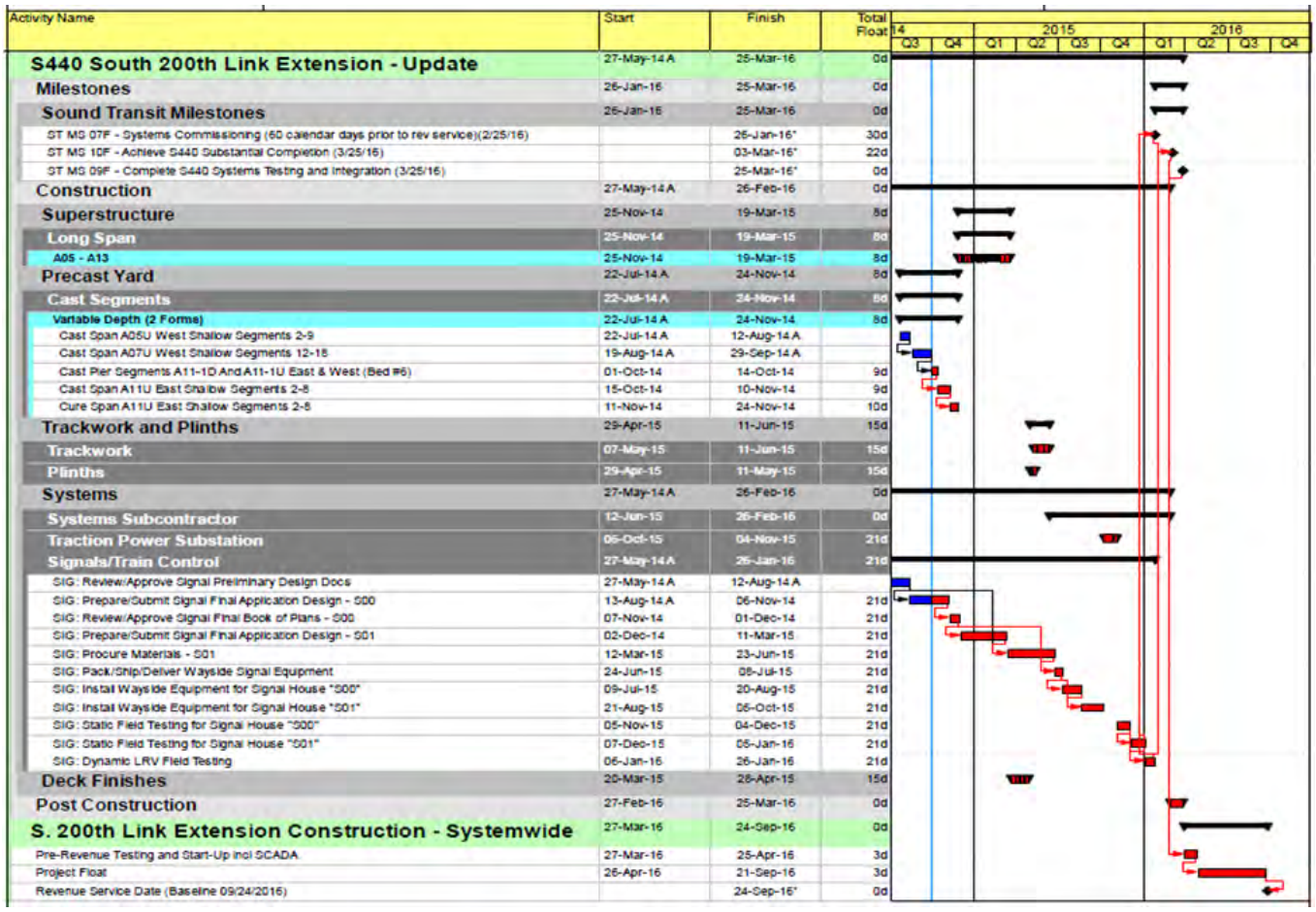
## Project Schedule

Typical span erection by the overhead truss is underway though full production rate has not been achieved but is expected once they pass the station area, due to the complexity and span misalignment. S445 DB Parking Garage Design/Builder was issued NTP in March 2014 and has mobilized on site with early access in August. A baseline schedule was accepted this period and the September schedule update is under review. The S. 200th Link Extension anticipated service launch is September 2016. (See Project Schedule Summary below).


Activity Name
Start
Finish
14
2015
2016
Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
S 200th Link Extension 01-May-13 A 24-Sep-16
S440 South 200th Link Extension - Update 01-May-13 A 25-Apr-16
SL 442 - Fare Collection Equipment (TVM/ORCA) 21-Sep-14 A 16-Apr-15
SL 443 - SCADA (U830) 21-Dec-15 20-Jan-16
S445 S. 200th Link Extension Parking Garage Design-Build 03-Mar-14 A 30-Dec-15
SL 446 - S. 200th WSDOT Roadway - Preliminary 28-Jul-14 A 01-Apr-16
SL 447 - S. 200th Station Area Roadway 26-Sep-14 A 08-Feb-16
S. 200th Link Extension Construction - Systemwide 27-Jan-16 24-Sep-16
Systems Testing/Integration 27-Jan-16 26-Mar-16
Pre-Revenue Testing and Start-Up incl SCADA 27-Mar-16 25-Apr-16
Project Float 26-Apr-16 21-Sep-16
Revenue Service Date (Baseline 09/24/2016) 24-Sep-16*

## Critical Path Analysis

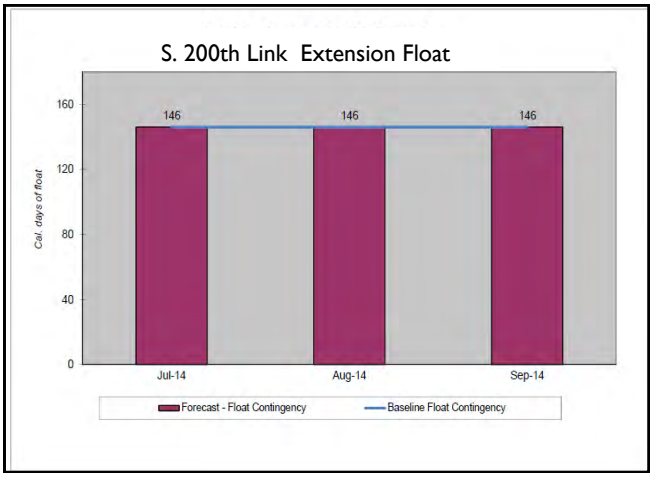
The critical path of S. 200th Link Extension runs through S440 which commences with the procurement of the guideway erection truss, guideway erection The critical path this period runs through the casting yard and long span erection through the track installation, OCS, Signal testing and concludes with system wide testing and integration. The second critical path is the signal design and procurement and through installation and testing.



| Activity Name | Start | Finish | Total Float |
|---|---|---|---|
| S440 South 200th Link Extension - Update | 27-May-14 A | 25-Mar-16 | 0d |
| Milestones | 26-Jan-16 | 25-Mar-16 | 0d |
| Sound Transit Milestones | 26-Jan-16 | 25-Mar-16 | 0d |
| ST MS 07F - Systems Commissioning (60 calendar days prior to rev service)(2/25/16) | | 26-Jan-16* | 30d |
| ST MS 10F - Achieve S440 Substantial Completion (3/25/16) | | 03-Mar-16* | 22d |
| ST MS 09F - Complete S440 Systems Testing and Integration (3/25/16) | | 25-Mar-16* | 0d |
| Construction | 27-May-14 A | 26-Feb-16 | 0d |
| Superstructure | 25-Nov-14 | 19-Mar-15 | 8d |
| Long Span | 25-Nov-14 | 19-Mar-15 | 8d |
| A05 - A13 | 25-Nov-14 | 19-Mar-15 | 8d |
| Precast Yard | 22-Jul-14 A | 24-Nov-14 | 8d |
| Cast Segments | 22-Jul-14 A | 24-Nov-14 | 8d |
| Variable Depth (2 Forms) | 22-Jul-14 A | 24-Nov-14 | 8d |
| Cast Span A05U West Shallow Segments 2-9 | 22-Jul-14 A | 12-Aug-14 A | |
| Cast Span A07U West Shallow Segments 12-18 | 19-Aug-14 A | 29-Sep-14 A | |
| Cast Pier Segments A11-1D And A11-1U East & West (Bed #6) | 01-Oct-14 | 14-Oct-14 | 9d |
| Cast Span A11U East Shallow Segments 2-8 | 15-Oct-14 | 10-Nov-14 | 9d |
| Cure Span A11U East Shallow Segments 2-8 | 11-Nov-14 | 24-Nov-14 | 10d |
| Trackwork and Plinths | 29-Apr-15 | 11-Jun-15 | 15d |
| Trackwork | 07-May-15 | 11-Jun-15 | 15d |
| Plinths | 29-Apr-15 | 11-May-15 | 15d |
| Systems | 27-May-14 A | 26-Feb-16 | 0d |
| Systems Subcontractor | 12-Jun-15 | 26-Feb-16 | 0d |
| Traction Power Substation | 05-Oct-15 | 04-Nov-15 | 21d |
| Signals/Train Control | 27-May-14 A | 25-Jan-16 | 21d |
| SIG: Review/Approve Signal Preliminary Design Docs | 27-May-14 A | 12-Aug-14 A | |
| SIG: Prepare/Submit Signal Final Application Design - S00 | 13-Aug-14 A | 06-Nov-14 | 21d |
| SIG: Review/Approve Signal Final Book of Plans - S00 | 07-Nov-14 | 01-Dec-14 | 21d |
| SIG: Prepare/Submit Signal Final Application Design - S01 | 02-Dec-14 | 11-Mar-15 | 21d |
| SIG: Procure Materials - S01 | 12-Mar-15 | 23-Jun-15 | 21d |
| SIG: Pack/Ship/Deliver Wayside Signal Equipment | 24-Jun-15 | 06-Jul-15 | 21d |
| SIG: Install Wayside Equipment for Signal House "S00" | 09-Jul-15 | 20-Aug-15 | 21d |
| SIG: Install Wayside Equipment for Signal House "S01" | 21-Aug-15 | 05-Oct-15 | 21d |
| SIG: Static Field Testing for Signal House "S00" | 05-Nov-15 | 04-Dec-15 | 21d |
| SIG: Static Field Testing for Signal House "S01" | 07-Dec-15 | 05-Jan-16 | 21d |
| SIG: Dynamic LRV Field Testing | 06-Jan-16 | 26-Jan-16 | 21d |
| Deck Finishes | 20-Mar-15 | 28-Apr-15 | 15d |
| Post Construction | 27-Feb-16 | 25-Mar-16 | 0d |
| S. 200th Link Extension Construction - Systemwide | 27-Mar-16 | 24-Sep-16 | 0d |
| Pre-Revenue Testing and Start-Up incl SCADA | 27-Mar-16 | 25-Apr-16 | 3d |
| Project Float | 26-Apr-16 | 21-Sep-16 | 3d |
| Revenue Service Date (Baseline 09/24/2016) | | 24-Sep-16* | 0d |

## Critical Path Float

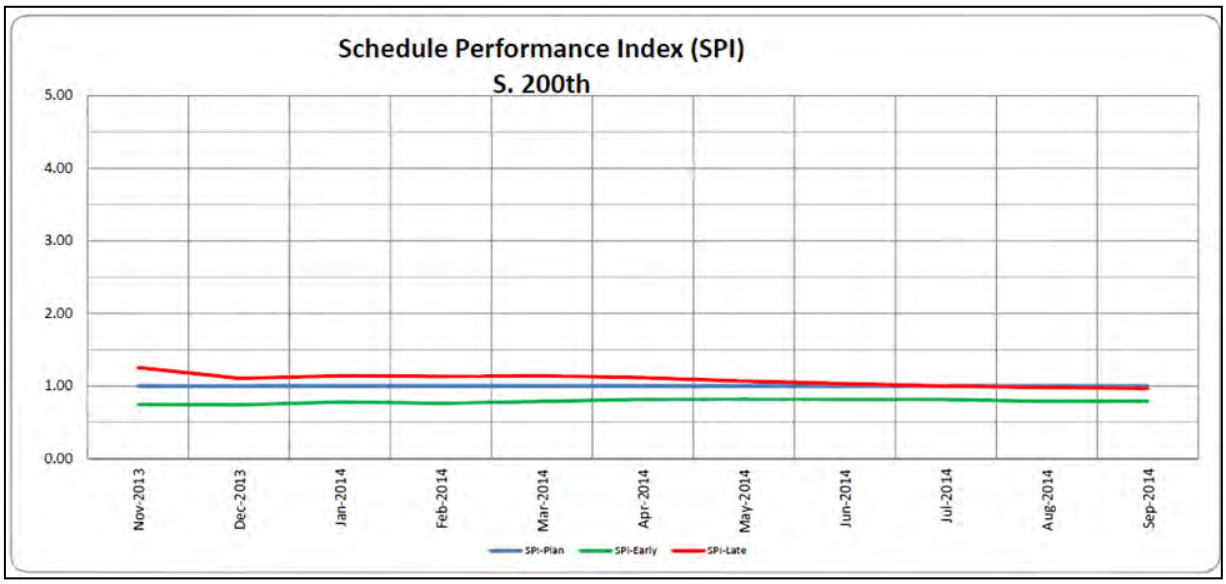
The float contingency for S. 200th Link Extension is at 146 days.



## Schedule Performance Index

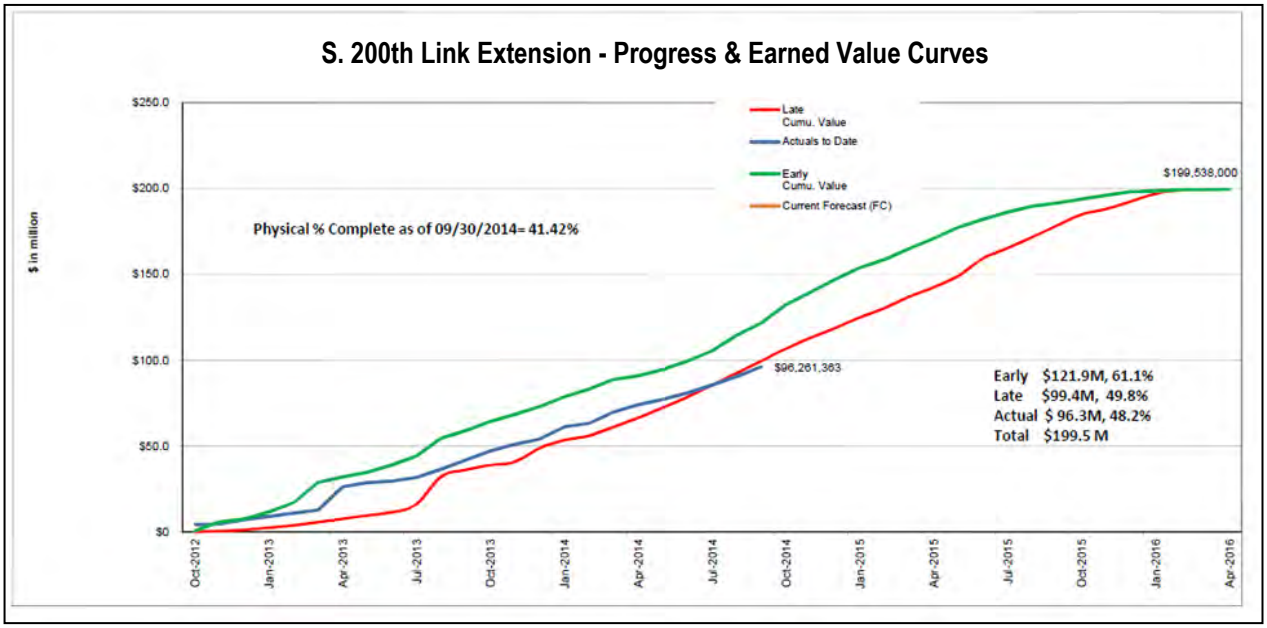
The Schedule Performance Index (SPI) for S.200th remains at 0.81 due to slower than expected span erection by the gantry truss and segment casting at the casting yard for S440. (See details on individual contract sections.)

Progress will continue to be monitored closely.




## Cost Progress Analysis

Overall S. 200th physical % complete is at 41.4%. Graphic below is a representation of the progress of major construction contracts cost compared to the early/late projections. S440 will be the main driver for performance levels for S. 200th.



## Construction Safety

Safety Statistics for the reporting period and year-to-date are summarized in the table below.

| Data/Measure | September 2014 | Year to Date | Project to Date |
|---|---|---|---|
| Recordable Injury/Illness Cases | 0 | 2 | 3 |
| Days Away From Work Cases | 0 | 0 | 0 |
| Total Days Away From Work | 0 | 0 | 0 |
| Restricted or Modified Work Cases | 1 | 1 | 2 |
| Total Days Restricted or Modified Work | 29 | 158 | 178 |
| First Aid Cases | 3 | 21 | 25 |
| Reported Near Mishaps | 0 | 5 | 12 |
| Average Number of Employees on Worksite | 135 | - | - |
| Total # of Hours (GC & Subs) | 26,431 | 250,751 | 393,817 |
| **OSHA Incident Rates** | **Monthly Average** | **Year to Date** | **Project to Date** |
| Recordable Injury Rate | 0.00 | 1.60 | 1.52 |
| DART Rate | 7.57 | 0.80 | 1.02 |
| *Recordable National Average* | 3.70 | 3.70 | 3.70 |
| *DART National Average* | 2.00 | 2.00 | 2.00 |
| *Recordable WA State Average* | 6.50 | 6.50 | 6.50 |
| *DART WA State Average* | 3.40 | 3.40 | 3.40 |

## Right-of-Way

The S. 200th Link Extension involves the acquisition of a range of property interests, including owner and tenant residential and commercial relocations. Property interests include compensable (e.g., easements, fee acquisitions) and non-compensable rights (e.g., rights of entry). The S. 200th Link Extension project involved the advance acquisition of three parcels that the Board approved in 2006 and 2007; the final decree was entered in 2009. These parcels were acquired through the Regional Fund Contingency. Sound Transit's protective acquisition of these properties prevented development of parcels needed for the project. The acquisition of property rights from additional parcels along the route was authorized by the Board in July 2011 and February 2012. The right-of-way program is summarized below.

| Line Section | Total Parcels Certified | Offers Made | Signed Agreements | Admin. Settlements | Possession and Use | Closings to date | Baseline Relocations Required | Relocations Completed |
|---|---|---|---|---|---|---|---|---|
| S440 | 61 | 57 | 0 | 0 | 0 | 56 | 8 | 8 |
| S445 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| S447 | 27 | 18 | 4 | 0 | 0 | 6 | 0 | 0 |
| **Total** | 89 | 76 | 4 | 0 | 0 | 62 | 8 | 8 |

*Note: Seven of these parcels are in two difference contracts. They are counted twice as they may have 2 different milestones.*

On November 21, 2013 the Sound Transit Board authorized the acquisition of 21 parcels for S447 that also includes 7 parcels previously certified for S440. Sound Transit has reduced the number of acquisitions for S447 from 28 parcels to 18.

*S440 DB Guideway and Station* - Offers have been made on 56 parcels. A total of 33 parcels were submitted for condemnation and 32 parcels have been filed in court. All owners have settled and no parcels remain in condemnation.

*S447 Station Area Roadways* - One parcels have signed. Three parcels closed. Eleven parcels are in negotiations.

## Quality Assurance Activities

Activities

- *S440*: MRB Dispositioned: 2 NCRs to repair concrete voids, aggregate and visible evidence of unconsolidated concrete near hand rail bolts on curb, and improper length of duct for Precast Segment; 2 NCRs to Use-As-Is regarding; duct BD4 (bottom slab) was misplaced, and 28-day concrete compressive strength value did not meet the 5,000 psi requirement.
- *S445*: MRB Dispositioned 1 RFD to use Schedule 10 roll groove pipe instead of Schedule 40, for 4-inch and above in parking garage fire protection system.

Issues

- *S440:* Spall on corbel B33-Construction/erection of shoring tower for Gantry Launching at column B32 was done twice because field crews did not check elevations of cribbing mat.
- *S445:* SCL has not submitted the 75% Audit Report. 100 percent submittal audit completed on August 13, 2014.

Summary

| Description | Sep 2014 | Notes |
|---|---|---|
| No. of Audits Planned | 0 | None |
| No. of Audits Completed | 0 | None |
| Reports in Progress | 0 | None |
| No. of Audits Postponed | 0 | None |

## Community Outreach

- Hosted Media Event on September 24.
- Hosted site tour for ST employees.
- Met with property owners of Hampton Inn and Wally Park.

## Sound Transit Board Actions

| Board Actions | Description | Date |
|---|---|---|
| | *None to report this period.* | |

## Contract Packages

The South 200th Link Extension consists of two major contract packages, both by Design Build methods, and two minor contracts. Below is a brief scope description of each package.

- **S440 Design Build Guideway and Station** - This contract involves the design and construction of an elevated guideway (1.6 miles) and station, site work, civil /roadwork, and systems. See S440 contract page for detailed information on the following page.
- **S445 Design Build – Parking Garage and Plaza** – This contract involves the design and construction of a parking garage (700 space structure), passenger pick-up and drop-off lot, plaza area, retail space and surface parking. See S445 contract page for details.
- **S446 Military Road & South 200th Street Improvements** – This contract package consists of construction of roadway and traffic signals work.
- **S447 Station Area Roadways & Surface Parking**- This contract package consists of station area roadway, surface parking, and non-motorized Improvements (sidewalks, traffic signals, pedestrian/bicycle connection, roadwork).

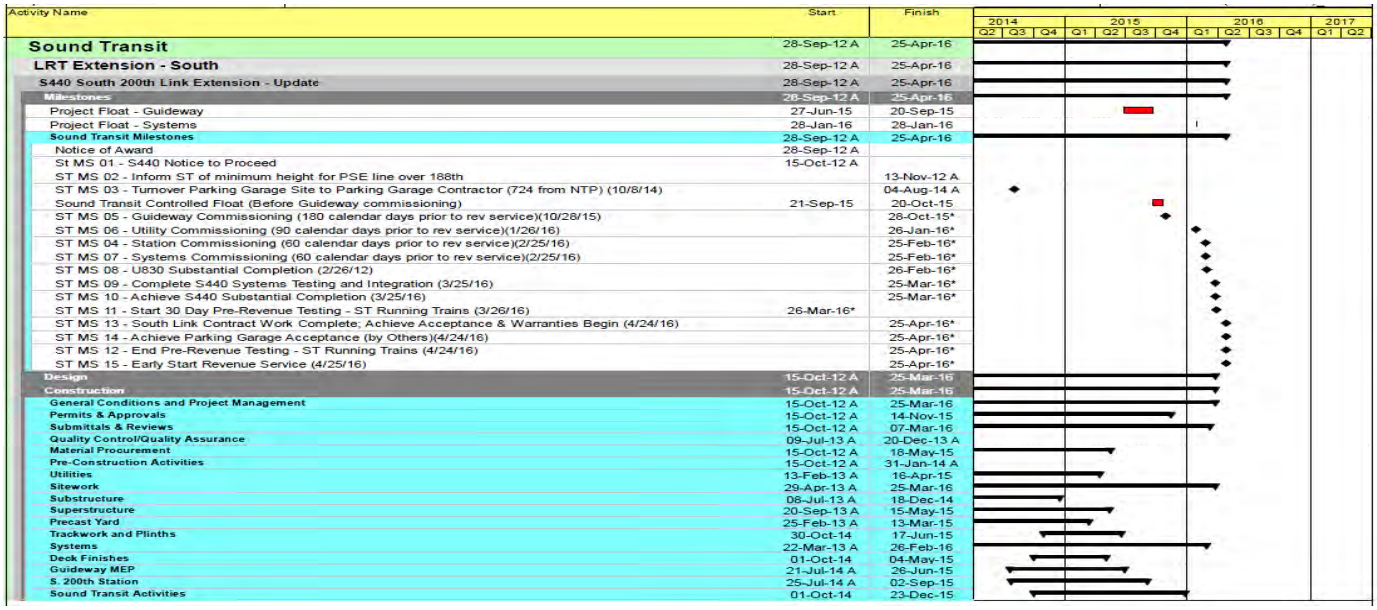
# S440 Contract—Design -Build (Guideway and Station)

## Current Progress

The station contractor mobilized onsite in September. Drilled shaft construction is complete. Column erection is at 66 (94%) columns completed. Casting yard production is at approx. 889 of 1116 segments (76.2%) have been poured to date. Gantry erection should progress into full production next period of two spans a week. Typical Span Erection by the gantry is underway but is progressing slower than expected due to the complexity through the station at 21% complete. Overall the progress of this contract represents 54.5% physical completion; the Design element is 97% complete and Construction is 51.2%.

## Schedule/Critical Path

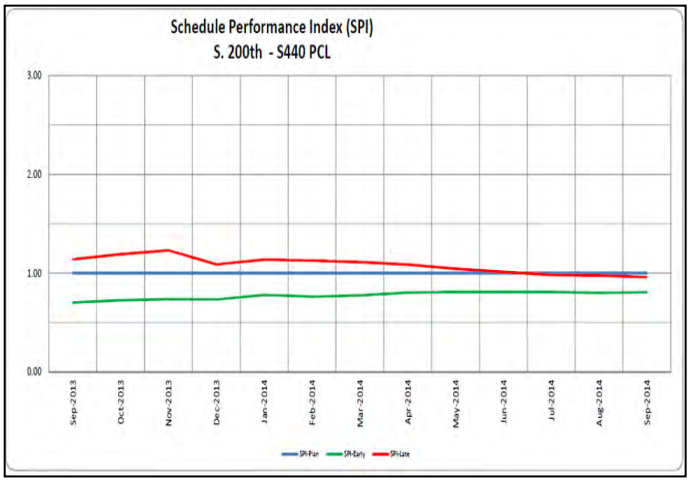
The schedule update for September is currently under review. Milestone #5, Guideway Commissioning, is reporting 139 days of positive float, including owner controlled float. A disconnect exists between plinth and track work at this time. Milestone #10 (Substantial Completion) is reporting 22 days of positive float. The critical path this period runs through the casting yard, balanced cantilever erection, plinths and track work and system installation and testing. Signal design and procurement activities are near critical this period. The station construction will also be monitored closely. Production rates will be monitored closely.



| Activity Name | Start | Finish |
|---|---|---|
| Sound Transit | 28-Sep-12 A | 25-Apr-16 |
| LRT Extension - South | 28-Sep-12 A | 25-Apr-16 |
| S440 South 200th Link Extension - Update | 28-Sep-12 A | 25-Apr-16 |
| Milestones | 28-Sep-12 A | 25-Apr-16 |
| Project Float - Guideway | 27-Jun-15 | 20-Sep-15 |
| Project Float - Systems | 28-Jan-16 | 28-Jan-16 |
| Sound Transit Milestones | 28-Sep-12 A | 25-Apr-16 |
| Notice of Award | 28-Sep-12 A | |
| St MS 01 - S440 Notice to Proceed | 15-Oct-12 A | |
| ST MS 02 - Inform ST of minimum height for PSE line over 188th | | 13-Nov-12 A |
| ST MS 03 - Turnover Parking Garage Site to Parking Garage Contractor (724 from NTP) (10/8/14) | | 04-Aug-14 A |
| Sound Transit Controlled Float (Before Guideway commissioning) | 21-Sep-15 | 20-Oct-15 |
| ST MS 05 - Guideway Commissioning (180 calendar days prior to rev service)(10/28/15) | | 28-Oct-15* |
| ST MS 06 - Utility Commissioning (90 calendar days prior to rev service)(1/26/16) | | 26-Jan-16* |
| ST MS 04 - Station Commissioning (60 calendar days prior to rev service)(2/25/16) | | 25-Feb-16* |
| ST MS 07 - Systems Commissioning (60 calendar days prior to rev service)(2/25/16) | | 25-Feb-16* |
| ST MS 08 - U830 Substantial Completion (2/26/12) | | 26-Feb-16* |
| ST MS 09 - Complete S440 Systems Testing and Integration (3/25/16) | | 25-Mar-16* |
| ST MS 10 - Achieve S440 Substantial Completion (3/25/16) | | 25-Mar-16* |
| ST MS 11 - Start 30 Day Pre-Revenue Testing - ST Running Trains (3/26/16) | 26-Mar-16* | |
| ST MS 13 - South Link Contract Work Complete; Achieve Acceptance & Warranties Begin (4/24/16) | | 25-Apr-16* |
| ST MS 14 - Achieve Parking Garage Acceptance (by Others)(4/24/16) | | 25-Apr-16* |
| ST MS 12 - End Pre-Revenue Testing - ST Running Trains (4/24/16) | | 25-Apr-16* |
| ST MS 15 - Early Start Revenue Service (4/25/16) | | 25-Apr-16* |
| Design | 15-Oct-12 A | 25-Mar-16 |
| Construction | 15-Oct-12 A | 25-Mar-16 |
| General Conditions and Project Management | 15-Oct-12 A | 25-Mar-16 |
| Permits & Approvals | 15-Oct-12 A | 14-Nov-15 |
| Submittals & Reviews | 15-Oct-12 A | 07-Mar-16 |
| Quality Control/Quality Assurance | 09-Jul-13 A | 20-Dec-13 A |
| Material Procurement | 15-Oct-12 A | 18-May-15 |
| Pre-Construction Activities | 15-Oct-12 A | 31-Jan-14 A |
| Utilities | 13-Feb-13 A | 16-Apr-15 |
| Sitework | 29-Apr-13 A | 25-Mar-16 |
| Substructure | 08-Jul-13 A | 18-Dec-14 |
| Superstructure | 20-Sep-13 A | 15-May-15 |
| Precast Yard | 25-Feb-13 A | 13-Mar-15 |
| Trackwork and Plinths | 30-Oct-14 | 17-Jun-15 |
| Systems | 22-Mar-13 A | 26-Feb-16 |
| Deck Finishes | 01-Oct-14 | 04-May-15 |
| Guideway MEP | 21-Jul-14 A | 26-Jun-15 |
| S. 200th Station | 25-Jul-14 A | 02-Sep-15 |
| Sound Transit Activities | 01-Oct-14 | 23-Dec-15 |

## Schedule Performance Index

The SPI is remains below at 1.00 at 0.80 this period. Delays to the commencement of station construction, span erection, and an aggressive baseline schedule continue to plague the S440. The contractor has been able to absorb these delays shifting the various work sequences into challenging future tasks for future subcontractors. Full production of the typical span erection with the overhead truss is expected next period and may improve the SPI.



## Key Activities

Current Period

- Began Station Plaza retaining wall installation.
- Continued rebar assemblies for pier columns, and caps.
- Continued column activities: prep/install/strip formwork, concrete pours, cure and monitor mass concrete, rebar install, and a few repairs. Only 4 more columns to complete.
- Continued long span activities: erect crane on top of Pier Table and began erecting cantilever segments; falsework installation; grouting longitudinal tendons.
- Aligned Station and Tailtrack spans.
- Continue Gantry segmental span erection (28% complete), and Cantilever segment erection on Port of Seattle ROW (43% complete).
- Segment erection spans remaining: 44 Span by Span; 4 Cantilever segments.
- Segment production this month at casting yard is 93, total produced to date is 916 out of 1166 (or 79%).
- Continue 54" storm drain repairs.
- Continue PSE utility relocation of distribution lines along little 28th Ave S.

Next Period

- Continue casting precast segments at Casting Yard.
- Continue rebar cage assembly for columns, pier table, corbels, and hammerheads.
- Continue column placements, hammerheads operations.
- Continue long span work; Continue launching gantry and erecting spans; Continue cantilever segment erection; Continue station construction work.
- Complete PSE undergrounding work.
- Continue 54" storm drain repairs.

## Closely Monitored Issues

- 54" Storm Drain. ST is proceeding with emergency repairs to the collapsed section of the storm drain. ST's work will be limited to the minimum needed to repair the storm drain.
- Cracking was observed on cap at B33. Launching gantry activities were placed on hold for about a week while the issue was investigated. Following a meeting of how to move forward, the DB Contractor's Engineer of Records (EOR) agreed to move ahead with erection after placing additional falsework and jack supports under the northside corbel at Bent B33. The EOR developed a corrective action plan after span erection, in the form of an NCR and subject to MRB review. Concrete cracking issues are being closely monitored and tracked as segmental erection continues.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***S440 Contractor—PCL Civil Contractors, Inc.*** | |
| Original Contract Value | $169,000,000 |
| Change Order Value | $2,099,341 |
| Current Contract Value | $171,099,341 |
| Total Actual Cost (Amount Billed) | $92,780,570 |
| Financial Percent Complete: | 54% |
| Physical Percent Complete: | 59% |
| Authorized Contingency | $13,520,000 |
| Contingency Drawdown | $2,099,341 |
| Contingency Index* | 3.8 |

*Twin boxes of balanced cantilever at S440.*

# S445 Contract—Design -Build Parking Garage

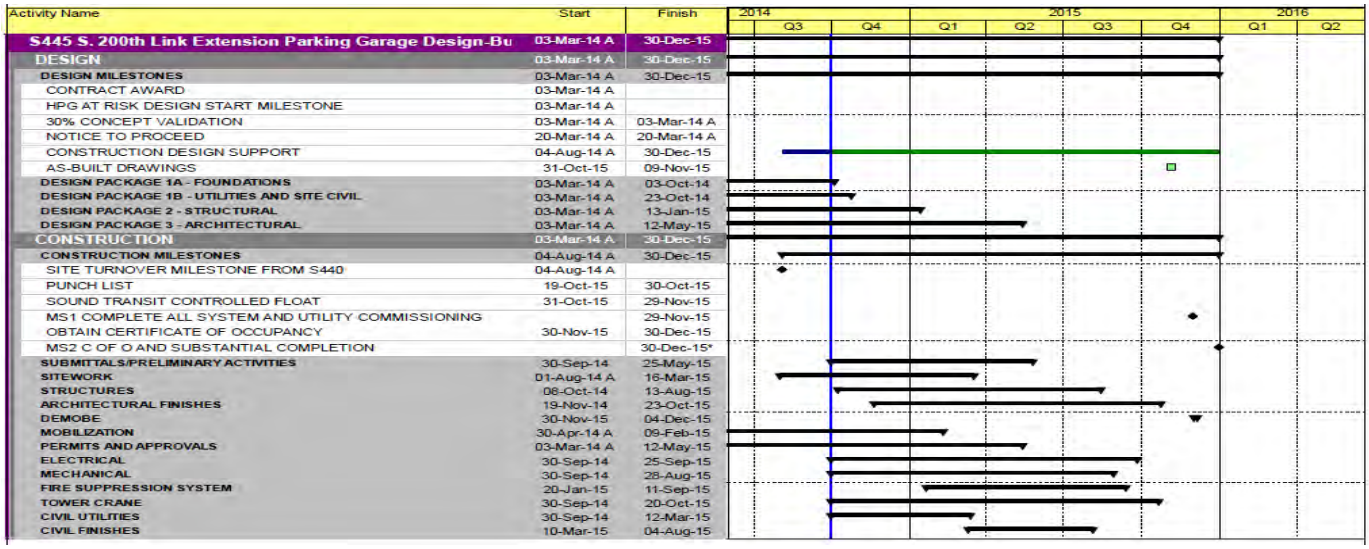
## Current Progress

S445 DB Parking Garage Design/Builder was issued the Notice to Proceed and a baseline schedule submittal was submitted last period.

## Schedule/Critical Path

The contract baseline schedule was accepted this period and garage design is well under way at 60% complete. Construction work has commenced and is at 5% complete. Site work and mass excavation at the garage are now underway. The critical path this period follows structural design through the garage structure and architectural finishes.

Milestone #1, Complete all System and Utility Commissioning is reporting 0 days float with Substantial Completion, Milestone #2, expected December 30, 2015.

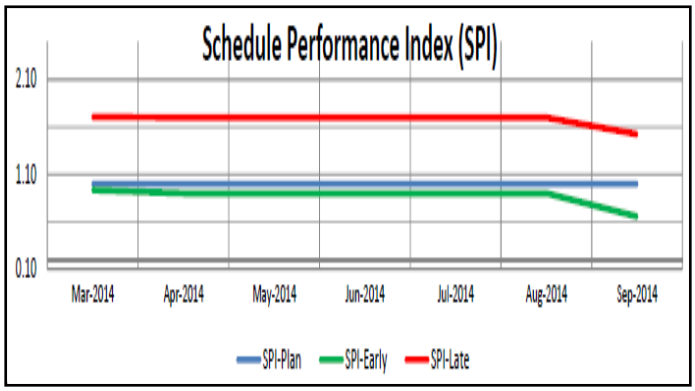


| Activity Name | Start | Finish |
|---|---|---|
| S445 S. 200th Link Extension Parking Garage Design-Bu | 03-Mar-14 A | 30-Dec-15 |
| DESIGN | 03-Mar-14 A | 30-Dec-15 |
| DESIGN MILESTONES | 03-Mar-14 A | 30-Dec-15 |
| CONTRACT AWARD | 03-Mar-14 A | |
| HPG AT RISK DESIGN START MILESTONE | 03-Mar-14 A | |
| 30% CONCEPT VALIDATION | 03-Mar-14 A | 03-Mar-14 A |
| NOTICE TO PROCEED | 20-Mar-14 A | 20-Mar-14 A |
| CONSTRUCTION DESIGN SUPPORT | 04-Aug-14 A | 30-Dec-15 |
| AS-BUILT DRAWINGS | 31-Oct-15 | 09-Nov-15 |
| DESIGN PACKAGE 1A - FOUNDATIONS | 03-Mar-14 A | 03-Oct-14 |
| DESIGN PACKAGE 1B - UTILITIES AND SITE CIVIL | 03-Mar-14 A | 23-Oct-14 |
| DESIGN PACKAGE 2 - STRUCTURAL | 03-Mar-14 A | 13-Jan-15 |
| DESIGN PACKAGE 3 - ARCHITECTURAL | 03-Mar-14 A | 12-May-15 |
| CONSTRUCTION | 03-Mar-14 A | 30-Dec-15 |
| CONSTRUCTION MILESTONES | 04-Aug-14 A | 30-Dec-15 |
| SITE TURNOVER MILESTONE FROM S440 | 04-Aug-14 A | |
| PUNCH LIST | 19-Oct-15 | 30-Oct-15 |
| SOUND TRANSIT CONTROLLED FLOAT | 31-Oct-15 | 29-Nov-15 |
| MS1 COMPLETE ALL SYSTEM AND UTILITY COMMISSIONING | | 29-Nov-15 |
| OBTAIN CERTIFICATE OF OCCUPANCY | 30-Nov-15 | 30-Dec-15 |
| MS2 C OF O AND SUBSTANTIAL COMPLETION | | 30-Dec-15* |
| SUBMITTALS/PRELIMINARY ACTIVITIES | 30-Sep-14 | 25-May-15 |
| SITEWORK | 01-Aug-14 A | 16-Mar-15 |
| STRUCTURES | 08-Oct-14 | 13-Aug-15 |
| ARCHITECTURAL FINISHES | 19-Nov-14 | 23-Oct-15 |
| DEMOBE | 30-Nov-15 | 04-Dec-15 |
| MOBILIZATION | 30-Apr-14 A | 09-Feb-15 |
| PERMITS AND APPROVALS | 03-Mar-14 A | 12-May-15 |
| ELECTRICAL | 30-Sep-14 | 25-Sep-15 |
| MECHANICAL | 30-Sep-14 | 28-Aug-15 |
| FIRE SUPPRESSION SYSTEM | 20-Jan-15 | 11-Sep-15 |
| TOWER CRANE | 30-Sep-14 | 20-Oct-15 |
| CIVIL UTILITIES | 30-Sep-14 | 12-Mar-15 |
| CIVIL FINISHES | 10-Mar-15 | 04-Aug-15 |



## Schedule Performance Index

The S445 SPI this period has dropped below a 1.0 to .67 based on early forecasts. Late design and permit submittals have delayed the start of heavy civil work at this time but is expected to improve next period.



## Key Activities

Current Period

- Continue design package development and coordination meetings with ST, RE team and other third party agencies.
- Design packages submitted for review: IFC Foundation
- Continued design and construction interface coordination meetings with S440 DB Contractor
- Installed temporary access roads.
- Completed installation of TESC BMPs.
- Completed clear and grub activities
- Continued survey and control.
- Continued excavation for structure and detention vault

Next Period

- Continue design and coordination meetings.
- Complete review of IFC Foundation, and begin review of IFC Utilities/75% Structural/75% Architecture design package submittals.
- Continue survey and control.
- Install temporary electrical service to site.
- Install temporary construction entrance at S. 200th and 26th Ave.
- Decommission monitoring well.
- Resume excavation for garage structure
- Prepare subgrade for detention vault and grid line D footing.
- Install formwork, place rebar, and pour concrete.

## Closely Monitored Issues

- DB Contractor has indicated interest in proceeding "at risk" for construction activities prior to IFC issuance of design package (Foundations) and City of SeaTac issued permits to take advantage of the benefits of early turnover of the site. This proposal will require further discussion and approval by ST to define what "at risk" activities include and that construction quality and inspection plans are in place.

## Cost Summary

| Present Financial Status | Amount |
|---|---|
| ***S445 Contractor—Harbor Pacific/Graham*** | |
| Original Contract Value | $29,978,000 |
| Change Order Value | $100,000 |
| Current Contract Value | $30,078,000 |
| Total Actual Cost (Amount Billed) | $3,597,500 |
| Financial Percent Complete: | 12% |
| Physical Percent Complete: | 11.7% |
| Authorized Contingency | $2,398,240 |
| Contingency Drawdown | $100,000 |
| Contingency Index* | N/A |

*Excavation for detention tank foundations continue at S445.*

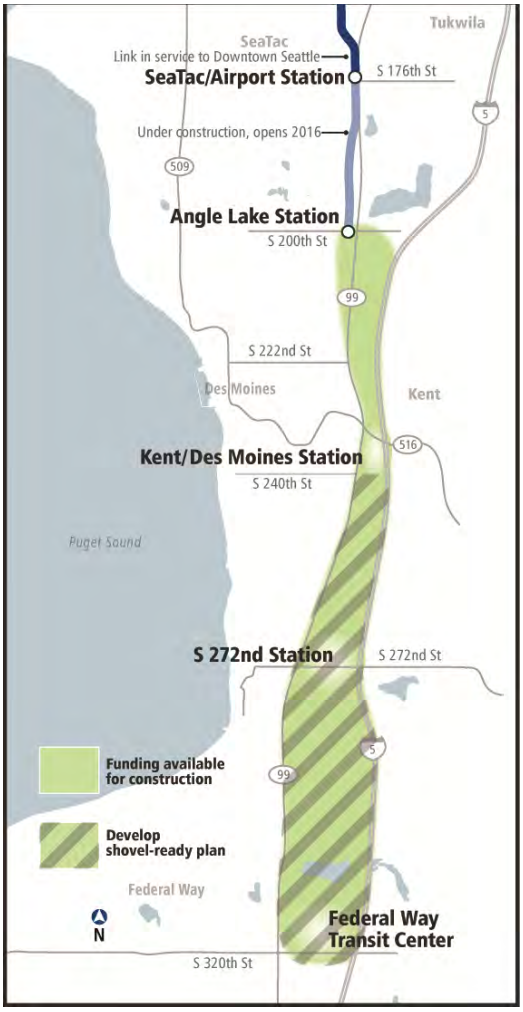
## Scope

The Federal Way Link Extension includes Alternatives Analysis (Phase 1), Environmental and Conceptual Engineering (Phase 2) for an extension of Link Light Rail from S. 200th St. to the Federal Way Transit Center. Phase 1 was completed in September 2013. Executed Phase 2 for Conceptual Engineering and Draft EIS work in October 2013.

Preliminary Engineering will be performed only for the segment from S. 200th St. to Kent/Des Moines (in the vicinity of Highline Community College).

## Key Project Activities/Issues

- Conceptual design, cost estimates and risk assessment activities are mostly complete.
- Cooperating agency review of the Draft EIS is complete; document being revised to address comments.
- Possible two month schedule extension to address cooperating agency comments and accommodate FTA reviews.




*Map of Federal Way Link Extension.*

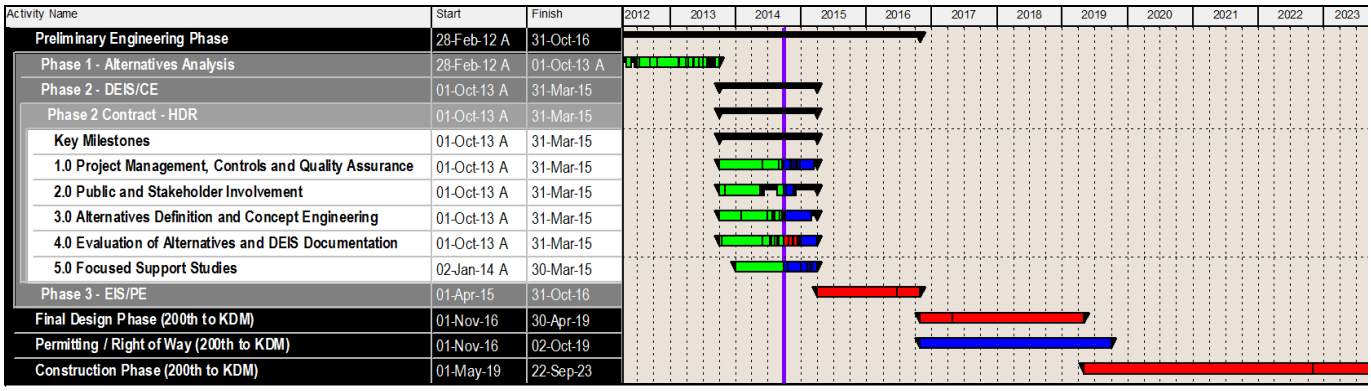
## Project Cost Summary

The Federal Way Link Extension is currently funded through the completion of preliminary engineering (PE) and environmental documentation, with the exception of the segment from Kent/Des Moines to Federal Way, which is only funded through environmental documentation. Board approval for additional funding for final design and construction of the segment from S. 200th St. to Kent/Des Moines will be sought upon completion of funded work. The proposed 2014 budget includes an increase to the project lifetime budget to fund Right of Way activities needed to advance the design work. Table (below) figures in millions.

| Phase | Adopted Budget | Commitment to Date | Incurred to Date | Forecasts and Trends | Estimated Final Cost (EFC) | Budget Versus EFC |
|---|---|---|---|---|---|---|
| Administration | $9.4 | $1.5 | $1.7 | $7.9 | $9.4 | $0.0 |
| Preliminary Engineering | $30.9 | $12.4 | $9.1 | $18.5 | $30.9 | $0.0 |
| Third Parties | $1.6 | $0.2 | $0.1 | $1.4 | $1.6 | $0.0 |
| Right of Way | $0.2 | $0.2 | $0.2 | $0.0 | $0.2 | $0.0 |
| **Total** | **$42.0** | **$14.4** | **$11.1** | **$27.7** | **$42.0** | **$0.0** |

## Project Schedule

The DEIS and Conceptual Engineering Phase will run through the 1st QTR 2015. The Final EIS and Preliminary Engineering will run through 4th QTR 2016. It is anticipated that the Board will adopt the project and the FTA will issue the ROD in late 2016.


Activity Name
Start
Finish
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
Preliminary Engineering Phase 28-Feb-12 A 31-Oct-16
Phase 1 - Alternatives Analysis 28-Feb-12 A 01-Oct-13 A
Phase 2 - DEIS/CE 01-Oct-13 A 31-Mar-15
Phase 2 Contract - HDR 01-Oct-13 A 31-Mar-15
Key Milestones 01-Oct-13 A 31-Mar-15
1.0 Project Management, Controls and Quality Assurance 01-Oct-13 A 31-Mar-15
2.0 Public and Stakeholder Involvement 01-Oct-13 A 31-Mar-15
3.0 Alternatives Definition and Concept Engineering 01-Oct-13 A 31-Mar-15
4.0 Evaluation of Alternatives and DEIS Documentation 01-Oct-13 A 31-Mar-15
5.0 Focused Support Studies 02-Jan-14 A 30-Mar-15
Phase 3 - EIS/PE 01-Apr-15 31-Oct-16
Final Design Phase (200th to KDM) 01-Nov-16 30-Apr-19
Permitting / Right of Way (200th to KDM) 01-Nov-16 02-Oct-19
Construction Phase (200th to KDM) 01-May-19 22-Sep-23

## Sound Transit Board Actions

Board motions and resolutions directly related to Federal Way Link Extension is summarized in the table below.

| Motion Number | Description | Date |
|---|---|---|
| | *None to report.* | |

## Environmental

- Preparing Draft EIS for publication late 2014 or early 2015.

## Community Outreach

- Participated in the Joint Sub-regional Mobility Coalition meeting.

## Phase 2 Conceptual Engineering

In October 2013, Sound Transit executed an amendment to the professional services agreement with HDR Engineering, Inc. for Phase 2 professional services, including Conceptual Engineering and a Draft Environmental Impact Statement.

## Phase 2 Key Activities

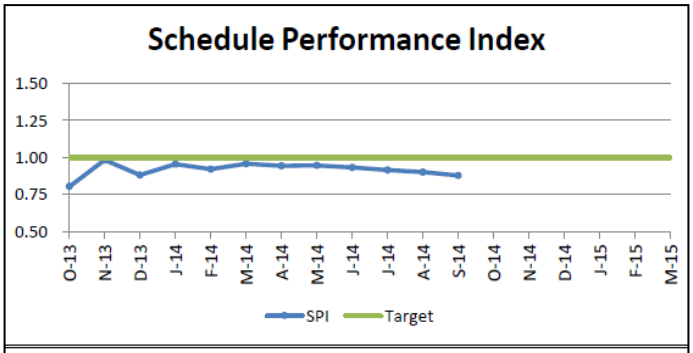
- Initiated preparations for public outreach efforts for Draft EIS publication.
- Continued preparations to notify and meet with potentially affected property owners.
- Completed conceptual design and cost estimates of the Draft EIS alternatives.
- Conducted series of discipline-specific risk review workshops.
- Completed cooperating agency review of preliminary Draft EIS.

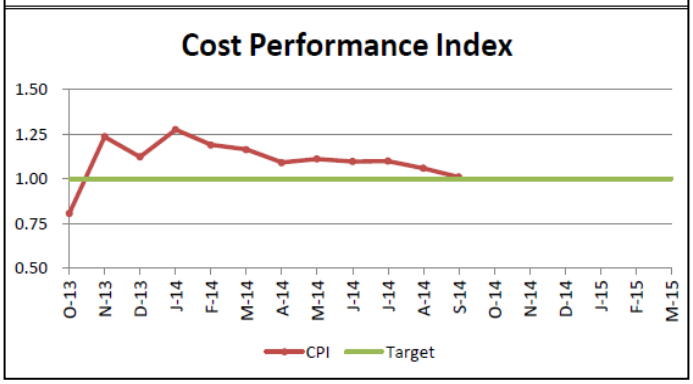
## Phase 2 Schedule Performance

The cumulative Schedule Performance Index (SPI) is 0.88 through September, indicating the overall amount of work accomplished is less than planned. Review of the critical path suggests that publication of the Draft EIS will be in February 2015, with ST Board identification of a preferred alternative (& Phase 3 contract approval) in May 2015. Although this represents a possible two month extension of the Phase 2 schedule, the Project Manager states it is still possible to complete Phase 3 PE work on schedule in October 2016.

## Phase 2 Cost Performance

$9.0M of the total contract amount, approximately 75%, has been spent through September 2014. Phase 2 expenditures through September totaled $5.8M, approximately 66% of the Phase 2 contract total. The Phase 2 percent complete reported at the end of September is 67%, with an earned value of $5.9M. The cumulative Cost Performance Index (CPI) through September is 1.01, indicating lower costs than planned for work accomplished. Based on the current trend, the Phase 2 cost is expected to be under budget. Currently there is no indication that a possible two month schedule extension will result in increased costs to Phase 2.




| Phase 2 Performance | Previous Period | Current Period* | Cumulative To Date |
|---|---|---|---|
| Amount Invoiced | $5,412,660 | $424,976 | $5,837,636 |
| % Spent | 61% | 5% | 66% |
| Earned Value | $5,725,945 | $165,088 | $5,891,033 |
| % Complete | 65% | 2% | 67% |
| **SPI** | **0.90** | **0.46** | **0.88** |
| **CPI** | **1.06** | **0.39** | **1.01** |

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## Scope

In cooperation with the City of Tacoma and Pierce Transit, Sound Transit is studying the potential of expanding the Tacoma Link light rail system in the context of the City and Pierce Transit service and capital plans. A technical advisory committee comprised of the City, Pierce Transit and Sound Transit staff convened to provide technical feedback and guidance throughout the Alternative Analysis (AA) process. Sound Transit, the City of Tacoma and Pierce Transit signed a cooperative agreement term sheet.

*Tacoma Link*

## Key Project Activities

- In February 2014, the Tacoma City Council unanimously recommended and the Sound Transit Board unanimously identified one alignment to undergo environmental review.
- During 1st QTR 2014 Sound Transit executed an amendment to the professional services contract with CH2M Hill in March to perform conceptual engineering and environmental review and to assist in the preparation of the Small Starts Grant application.
- *Conceptual Engineering (CE):* Final CE Plans are almost complete. Value Engineering and Risk Assessment studies will begin in October 2014.
- *Environmental:* The FTA made a preliminary decision to proceed with DCE. The environmental review process is scheduled to be completed in 1st QTR 2015.
- The initial Small Starts Rating submittal was submitted in September 2014.

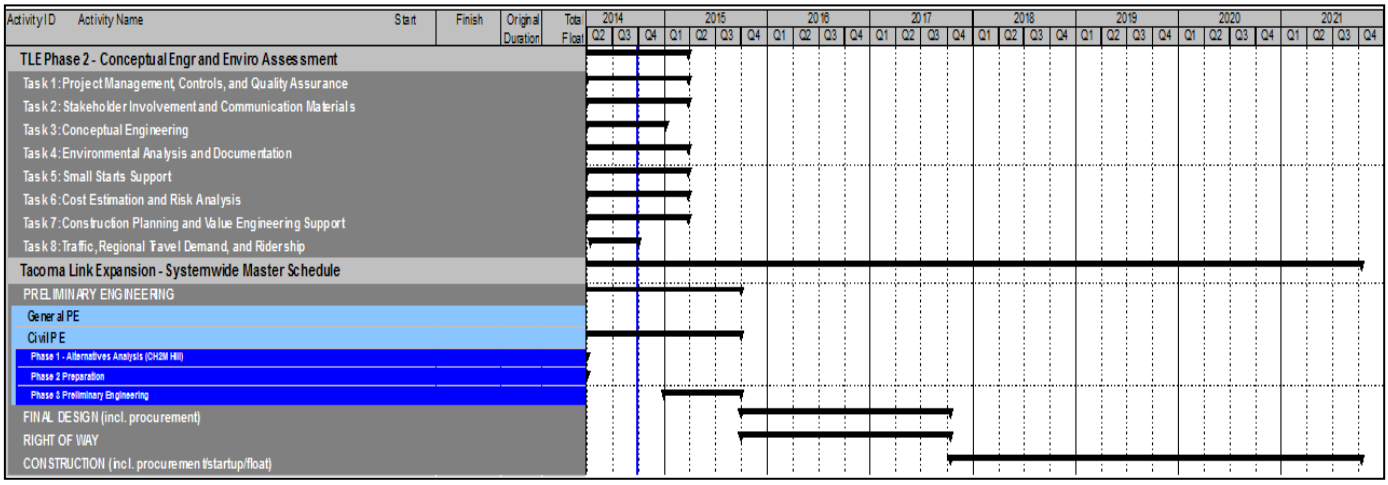
## Project Cost Summary

The Tacoma Link Alternatives Analysis is currently funded through the completion of the alternatives analysis, PE and Environmental Documentation. Funding included in the ST2 financial plan represents a maximum capital contribution by Sound Transit to the overall cost of expanding Tacoma Link if other public or private entities provide additional funding. Board approval for funding environmental documentation, preliminary engineering, final design and construction will be sought upon completion of the alternatives analysis. Board approval for funding preliminary engineering, final design and construction will be sought upon completion of the environmental documentation, a project funding strategy and agreements with funding partners. The proposed 2014 budget includes an increase to the project lifetime budget to fund Right of Way activities needed to advance the design work. (Table in millions.)

| Phase | Adopted Budget | Commitment to Date | Incurred to Date | Forecasts and Trends | Estimated Final Cost (EFC) | Budget Versus EFC |
|---|---|---|---|---|---|---|
| Administration | $1.0 | $0.8 | $0.9 | $0.3 | $1.1 | $0.0 |
| Preliminary Engineering | $4.7 | $3.5 | $1.9 | $1.3 | $4.7 | $0.0 |
| Right of Way | $0.1 | $0.0 | $0.0 | $0.0 | $0.1 | $0.0 |
| **Total** | **$5.8** | **$4.3** | **$2.7** | **$1.6** | **$5.9** | **$0.0** |

## Project Schedule

The Alternative Analysis was completed by the 1st QTR 2014. The project schedule is presented below.


Activity ID
Activity Name
Start
Finish
Original Duration
Total Float
2014
2015
2016
2017
2018
2019
2020
2021
Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4 Q1 Q2 Q3 Q4
TLE Phase 2 - Conceptual Engr and Enviro Assessment
Task 1: Project Management, Controls, and Quality Assurance
Task 2: Stakeholder Involvement and Communication Materials
Task 3: Conceptual Engineering
Task 4: Environmental Analysis and Documentation
Task 5: Small Starts Support
Task 6: Cost Estimation and Risk Analysis
Task 7: Construction Planning and Value Engineering Support
Task 8: Traffic, Regional Travel Demand, and Ridership
Tacoma Link Expansion - Systemwide Master Schedule
PRELIMINARY ENGINEERING
General PE
Civil P E
Phase 1 - Alternatives Analysis (CH2M Hill)
Phase 2 Preparation
Phase 3 Preliminary Engineering
FINAL DESIGN (incl. procurement)
RIGHT OF WAY
CONSTRUCTION (incl. procurement/startup/float)

## Environmental

- Sound Transit identified a preferred alignment that will be evaluated as part of the environmental process.

## Community Outreach

- Hosted drop-in events at the Tacoma Farmers Market and Theater District Station with approximately 70 attendees.
- Attended Stadium District Meeting and the New Tacoma Neighborhood Council Meeting.

## Phase 2 Conceptual Engineering

In March 2014, Sound Transit executed an amendment to the professional services agreement with CH2M Hill, Inc. for Phase 2 professional services, including conceptual engineering and environmental work.

## Phase 2 Key Activities

- Continued public outreach efforts.
- Prepared detailed Phase 2 work plan and schedule.
- Prepared design criteria and various conceptual engineering technical memos.
- Drafted methodology for the environmental analysis.
- Continued to refine the design of the E-1 alternative.

## Phase 2 Schedule and Cost Performance

This project will begin reporting earned value data for the Phase 2 contract soon.

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## Scope

Sound Transit is reviewing and evaluating current and future light rail storage and maintenance requirements to support the development, design, and construction of a future light rail operations and maintenance facility for proposed system expansion. Sound Transit Board identified Draft Environmental Impact Statement (DEIS) alternatives in 2012.

## Key Project Activities

- DEIS published in May 2014 and comment period closed June 23, 2014.
- Coordination Support for Stakeholder Meetings scheduled for September 19 and October 9, 2014.
- Finalizing CO 005 for remaining work in Phase 1.
- Finalized CO 005 for remaining work in Phase 1. Currently in approval process for final execution.
- Phase 2 NTP on September 8, 2014.

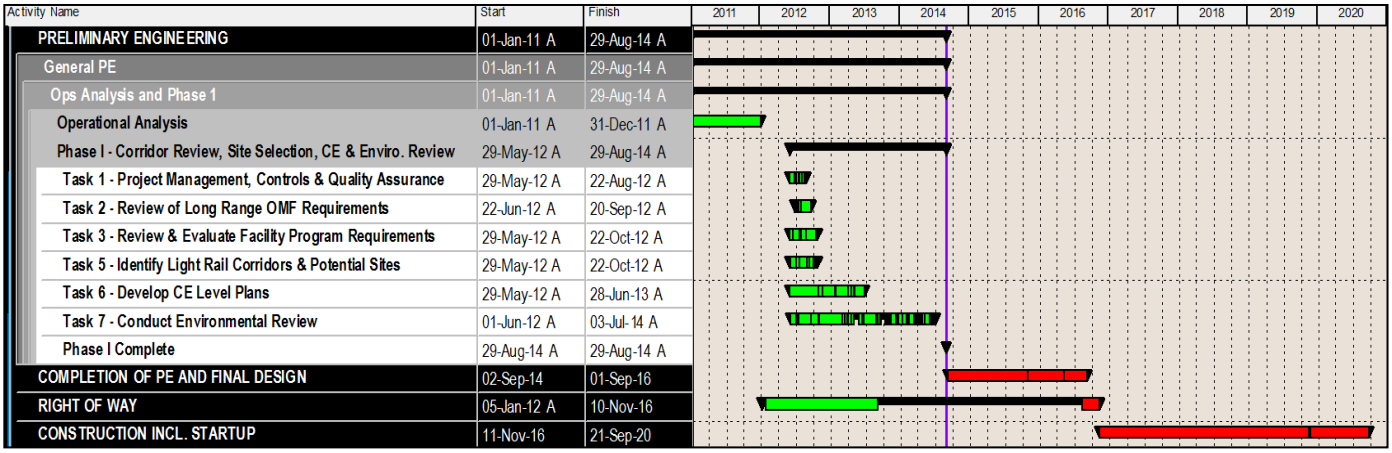
## Program Cost

The Link Operations and Maintenance Satellite Facility (OMSF) project is currently funded through the completion of preliminary engineering (PE) and environmental documentation. Board approval for additional funding for final design and construction will be sought upon completion of PE. Table (below) figures in millions.

| Phase | Adopted Budget | Commit-ment to Date | Incurred to Date | Forecasts and Trends | Estimated Final Cost (EFC) | Budget Versus EFC |
|---|---|---|---|---|---|---|
| Administration | $3.2 | $0.6 | $0.7 | $2.6 | $3.2 | $0.0 |
| Preliminary Engineering | $10.0 | $8.5 | $3.1 | $1.5 | $10.0 | $0.0 |
| 3rd Party Agreements | $0.4 | $0.0 | $0.0 | $0.4 | $0.4 | $0.0 |
| Right of Way | $23.2 | $23.2 | $23.1 | $0.1 | $23.2 | $0.0 |
| **Total** | **$36.8** | **$32.3** | **$27.0** | **$4.5** | **$36.8** | **$0.0** |

## Program Schedule

The project schedule is presented below. The extension of Phase 1 completion to August 2014 requires that the remaining preliminary engineering and final design work be complete by September 2016 in order to maintain the current construction and startup schedule. Sound Transit is preparing a conceptual schedule to show the remaining preliminary engineering duration and investigating alternative delivery methods, such as design-build, in order to retain the desired service date in 2020. Moving the service date into 2021 may conflict with the operational needs of the East Link Extension.


Activity Name
Start
Finish
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
PRELIMINARY ENGINEERING 01-Jan-11 A 29-Aug-14 A
General PE 01-Jan-11 A 29-Aug-14 A
Ops Analysis and Phase 1 01-Jan-11 A 29-Aug-14 A
Operational Analysis 01-Jan-11 A 31-Dec-11 A
Phase I - Corridor Review, Site Selection, CE & Enviro. Review 29-May-12 A 29-Aug-14 A
Task 1 - Project Management, Controls & Quality Assurance 29-May-12 A 22-Aug-12 A
Task 2 - Review of Long Range OMF Requirements 22-Jun-12 A 20-Sep-12 A
Task 3 - Review & Evaluate Facility Program Requirements 29-May-12 A 22-Oct-12 A
Task 5 - Identify Light Rail Corridors & Potential Sites 29-May-12 A 22-Oct-12 A
Task 6 - Develop CE Level Plans 29-May-12 A 28-Jun-13 A
Task 7 - Conduct Environmental Review 01-Jun-12 A 03-Jul-14 A
Phase I Complete 29-Aug-14 A 29-Aug-14 A
COMPLETION OF PE AND FINAL DESIGN 02-Sep-14 01-Sep-16
RIGHT OF WAY 05-Jan-12 A 10-Nov-16
CONSTRUCTION INCL. STARTUP 11-Nov-16 21-Sep-20

## Phase 1 Conceptual Engineering and DEIS

Sound Transit executed a professional services agreement with Huitt-Zollars, Inc. for civil engineering and architectural design services and issued NTP for Phase 1, Conceptual Engineering and DEIS, for the Link Operations and Maintenance Satellite Facility (OMSF) project in May 2012.

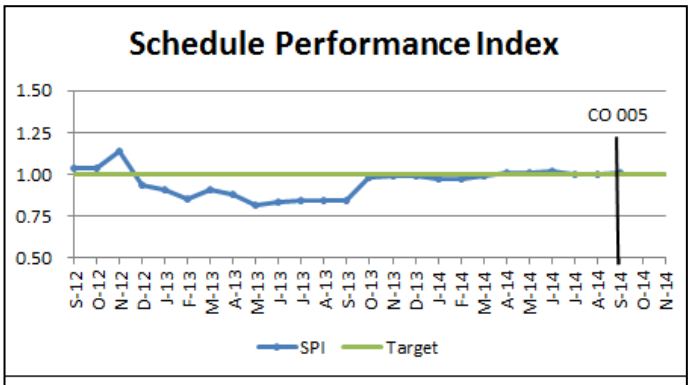
## Phase 1 Key Activities

- Delivered Final Phase 2 scope of work and cost proposal for Preliminary Engineering and the final EIS on July 29.

## Phase 1 Schedule Performance

Change Order 005 extended the Phase 1 schedule to October 2014. Final activities to complete Phase 1 work will work concurrently with the kickoff of Phase 2 activities to maintain schedule.

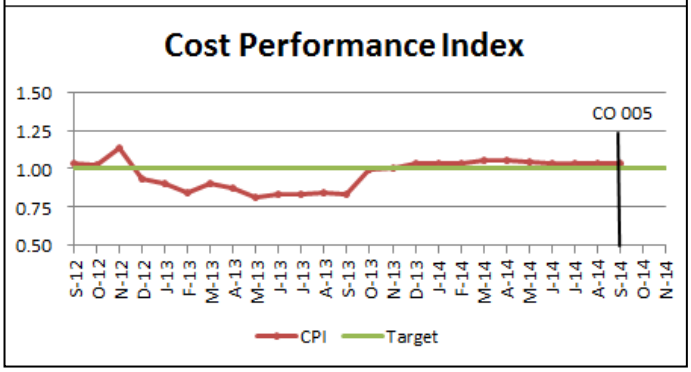
The cumulative Schedule Performance Index (SPI) trends at 1.01 through September 2014, which means that cumulative work accomplished is trending in accordance with plan.




## Phase 1 Cost Performance

Change Order 005 extended the schedule and increased contract budget.

$2.8M of the total contract amount, approximately 96%, was spent through September 2014. The Phase 1 percent complete is 99%, with an earned value of $2.8M. The cumulative Cost Performance Index (CPI) is 1.03, meaning that expenditures are in line with the earned value. Based on these trends, the final cost is expected to be very close to the revised contract budget of $2.9M.




| Phase 1 Performance | Previous Period | Current Period | Cumulative To Date |
|---|---|---|---|
| Amount Invoiced | $2,731,485 | $48,167 | $2,779,652 |
| % Spent | 97% | 2% | 96% |
| Earned Value | $2,825,542 | $47,853 | $2,873,395 |
| % Complete | 100% | 2% | 99% |
| **SPI** | **1.00** | **2.51** | **1.01** |
| **CPI** | **1.03** | **1.00** | **1.03** |

## Staffing Variance Reporting - June 2014

Recruiting Activity

During reporting period of August 2014 the following positions were filled to support the capital program.

| Position | Project Assignment | Planned Hire Date |
|---|---|---|
| Electrical Engineer | Systems | 2014 Attrition |
| Configuration Coordinator | All capital projects | 2014 Attrition* |
| Sr. Cost Engineer | Project Controls | April 2014 |
| Deputy Director | Real Property | August 2014 |

**Attrition resulting from internal promotion*

Recruiting continued during the reporting period for the following design, engineering and construction management positions:

| Position | Project Assignment | Planned Hire Date |
|---|---|---|
| Construction Manager | Sounder and Regional Express | 2013 Attrition |
| Systems Engineer | All capital projects | 2013 Attrition |
| Sr. Cost Engineer | Systems | 2013 Attrition |
| Structural Engineer | All capital projects | 2013 Attrition |
| Deputy Project Director | University Link Extension | 2013 Attrition* |
| Project Director | Sounder and Regional Express | 2013 Attrition* |
| Construction Manager | East Link Extension | 2013 Attrition* |
| Sr. Systems Engineer | Enterprise | December 2013 |
| Construction Claims Specialist | Construction Management | March 2014 |
| Specifications Writer | All capital projects | April 2014 |
| Construction Manager | Northgate Link Extension | April 2014 |
| Construction Manager | Northgate Link Extension | April 2014 |
| Construction Manager | Systems | April 2014 |
| Corridor Design Manager | Systems | May 2014 |
| Project Manager | Non-corridor projects | May 2014 |
| Deputy Director | Construction Management | May 2014 |
| Project Manager | Public Art | May 2014 |
| Fire Protection Engineer | All capital projects | June 2014 |
| Corridor Design Manager | Northgate Link Extension | 2014 Attrition* |
| Document Control Coordinator | S. 200$^{th}$ Link Ext., Link OMSF | 2014 Attrition* |

| Position | Project Assignment | Planned Hire Date |
|---|---|---|
| Cost Engineer | Link Capital Program | 2014Attrition* |
| Civil Engineer | Right of Way | 2014 Attrition* |
| Sr. Real Property Agent | All capital projects | 2014 Attrition* |
| Senior CAD Drafter | All capital projects | 2014 Attrition |
| Senior CAD Drafter | All capital projects | 2014 Attrition |
| Project Manager | Sounder and Regional Express | 2014 Attrition |
| Architect | East Link Extension | 2014 Attrition |
| Sr. Project Coordinator | University Link Extension | 2014 Attrition |
| Deputy Director | Systems Eng. and Integration | 2014 Attrition |
| Architect | University Link MOW Building | 2014 Attrition |
| Sr. Leasing Document Coordinator | Real Property | 2014 Attrition |
| Sr. Noise &Vibration Engineer | Link projects | 2014 Reclass |

*Attrition resulting from internal promotion

## Project Staffing – Major Link Light Rail Programs

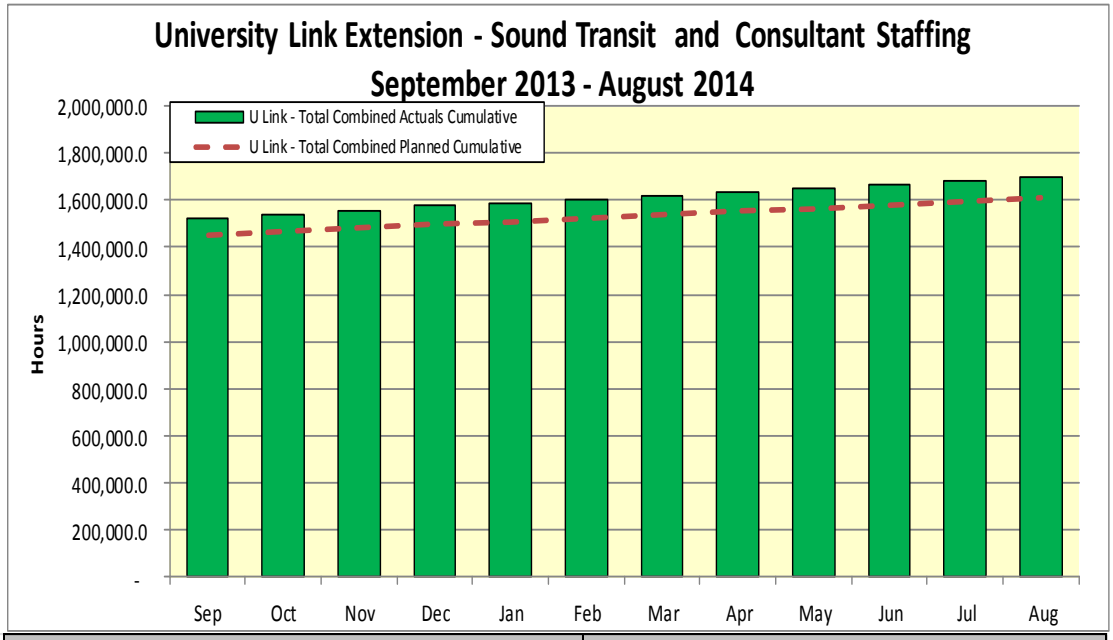
A total of 634 (115% of plan) consultant and internal staff full time equivalents (FTE) participated in the on-going planning, design and construction of Link light rail extensions in August 2014, an increase of 5% (29 FTE) from July. Staffing exceeded plan for all major Link projects. Year-to-date staffing for the Link capital program continues to trend nearly 10% (53 FTE/mo.) above plan. Staffing variance to plan for the month by project follows.

| | 2014 Staffing Variance Summary - Current Period and Year to Date | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Aug 2014 | | | | | | | | Year to Date - Average | | | | | | | | | | | |
| | Consultant | | | | Sound Transit Staff | | | | Consultant Staff | | | | Sound Transit Staff | | | | All Staff | | | |
| | FTE | | Variance | | FTE | | Variance | | FTE | | Variance | | FTE | | Variance | | FTE | | Variance | |
| Link Extension | Plan | Actual | FTE | % of Plan | Plan | Actual | FTE | % of Plan | Plan | Actual | FTE | % of Plan | Plan | Actual | FTE | % of Plan | Plan | Actual | FTE | % of Plan |
| University | 51.2 | 53.4 | 2.2 | 4% | 31.0 | 38.7 | 7.7 | 25% | 55.1 | 58.9 | 3.7 | 107% | 31.0 | 37.1 | 6.1 | 120% | 86.1 | 95.9 | 9.8 | 111% |
| Northgate | 77.6 | 97.8 | 20.2 | 26% | 42.1 | 35.0 | -7.1 | -17% | 77.6 | 87.6 | 10.0 | 113% | 42.1 | 36.5 | -5.6 | 87% | 119.7 | 124.1 | 4.4 | 104% |
| South 200th | 21.7 | 26.1 | 4.4 | 20% | 15.6 | 15.8 | 0.2 | 1% | 19.4 | 20.4 | 1.0 | 105% | 15.6 | 15.3 | -0.3 | 98% | 35.0 | 35.7 | 0.7 | 102% |
| East | 194.4 | 207.9 | 13.5 | 7% | 65.3 | 66.2 | 0.9 | 1% | 194.4 | 219.1 | 24.7 | 113% | 65.4 | 62.9 | -2.5 | 96% | 259.8 | 282.0 | 22.2 | 109% |
| Lynnwood | 38.7 | 81.5 | 42.8 | 111% | 16.0 | 12.2 | -3.8 | -24% | 38.7 | 58.5 | 19.8 | 151% | 16.0 | 12.3 | -3.7 | 77% | 54.7 | 70.9 | 16.2 | 130% |
| Total | 383.6 | 466.7 | 83.1 | 22% | 170.0 | 167.9 | -2.1 | -1% | 385.2 | 444.4 | 59.2 | 115% | 170.1 | 164.1 | -6.0 | 96% | 555.3 | 608.5 | 53 | 110% |

## University Link Extension Staffing

Total Internal and External Staffing – University Link Extension

There were 92.1 FTE assigned to the University Link Extension in August including 53.4 consultant and 38.7 internal FTE. Staffing for the month was 6% (9.9 FTE) above plan; staffing decreased 4% (4 FTE) from July. Year-to-date, staffing is trending 11% (9.8 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly project staffing is trending approximately 6% (5.8 FTE/mo.) above plan.

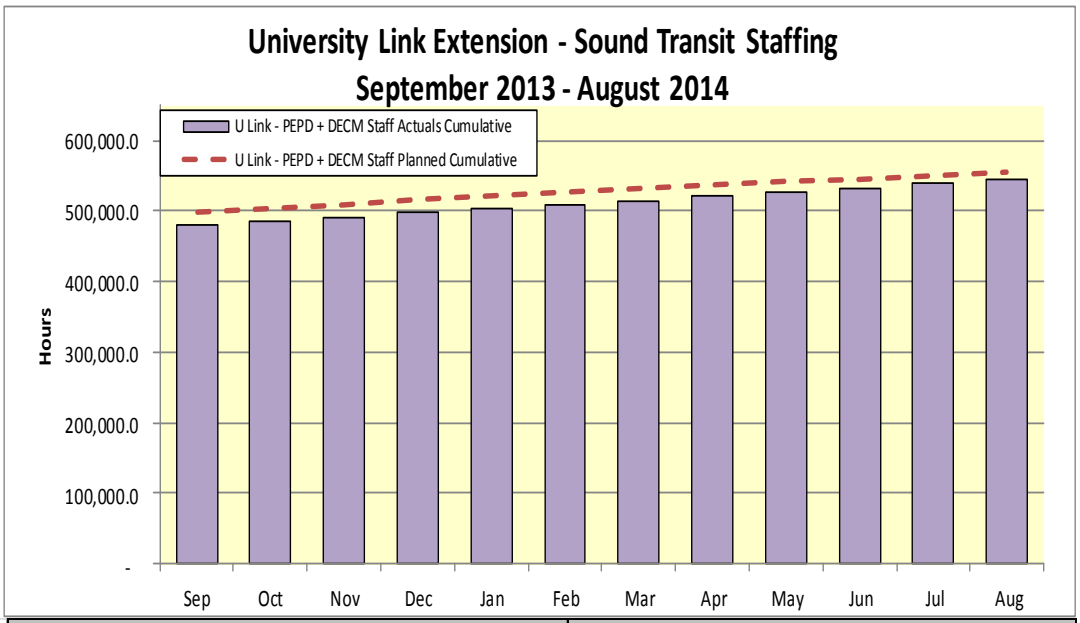



| | Labor Hours to Date | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 1,607,048.6 | 1,697,607.6 | 90,559.1 | 105.6% | 13,872.0 | 14,731.2 | 859.2 | 106.2% |
| Monthly Average | 16,567.5 | 17,501.1 | 933.6 | | | | | |
| Monthly FTE | 103.5 | 109.4 | 5.8 | | 86.7 | 92.1 | 5.4 | |

## University Link Extension Staffing

Internal Resource Commitments to University Link Extension

There were 38.7 internal FTE assigned to the University Link Extension in August. Internal staffing decreased 7% (3 FTE) from the previous reporting period and was 25% (7.7 FTE) above plan; year-to-date, average internal staffing of 37.1 FTE/mo. was 20% (6.1 FTE/mo.) above plan. Cumulatively, since August 2006, average monthly internal staffing is trending approximately 2% (1 FTE/mo.) below the baseline.

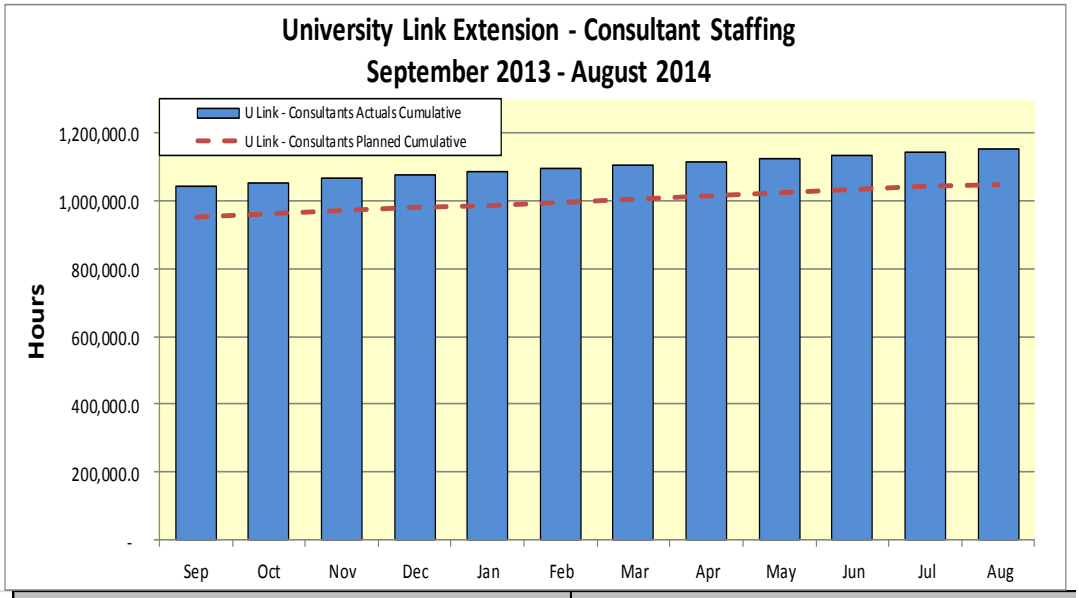



| | Labor Hours to Date | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 556,079.8 | 544,865.6 | -11,214.2 | 98.0% | 4,960.0 | 6,193.9 | 1,233.9 | 124.9% |
| Monthly Average | 5,732.8 | 5,617.2 | -115.6 | | | | | |
| Monthly FTE | 35.8 | 35.1 | -0.7 | | 31.0 | 38.7 | 7.7 | |

## University Link Extension Staffing

Consultant Resource Commitments to University Link Extension

During August, 53.4 consultant FTE were assigned to the University Link Extension; consultant staffing was 4% (2.3 FTE) below plan. Year-to-date average University Link Extension consultant staffing continues to trend 7% (3.7 FTE/mo.) above plan; cumulatively, since August 2006, average monthly consultant staffing continues to trend approximately 10% (6.6 FTE/mo.) above plan.



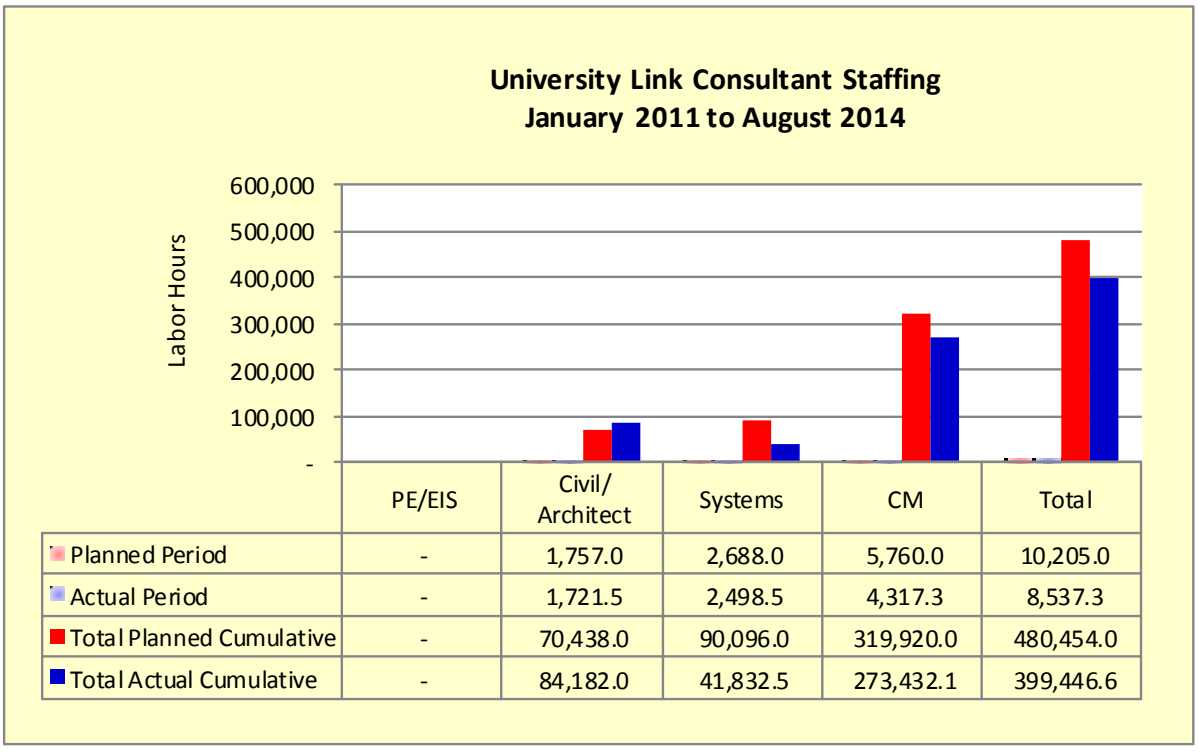

| | Labor Hours to Date | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 1,050,968.8 | 1,152,742.1 | 101,773.3 | 109.7% | 8,912.0 | 8,537.3 | -374.7 | 95.8% |
| Monthly Average | 10,834.7 | 11,883.9 | 1,049.2 | | | | | |
| Monthly FTE | 67.7 | 74.3 | 6.6 | | 55.7 | 53.4 | -2.3 | |

## University Link Extension Staffing

Consultant Resource Commitments to University Link Extension, continued

Consultant utilization by discipline for the University Link Extension since January 2011 is illustrated below.

In August, civil engineering and architecture and construction consultant staffing (10.8 FTE) increased 21% (1.9 FTE) from July and was above plan by 36% (2.9 FTE). Cumulatively, civil engineering and architecture consultant staffing (35.2 FTE/mo.) continues to trend 40% (10.1 FTE/mo.) above plan. Systems consultant staffing (15.6 FTE) decreased 10% (01.7 FTE) from July and was 12% (2.2 FTE) below plan; cumulatively, systems consultant staffing (7.8 FTE/mo.) remains 35% (4.3 FTE/mo.) below plan. Construction management consultant staffing (27 FTE) was 10% (3 FTE) below plan and 4% (1.2 FTE) below July staffing. Cumulative construction management staffing (31.3 FTE/mo.) remains 2% (0.7 FTE/mo.) above plan.

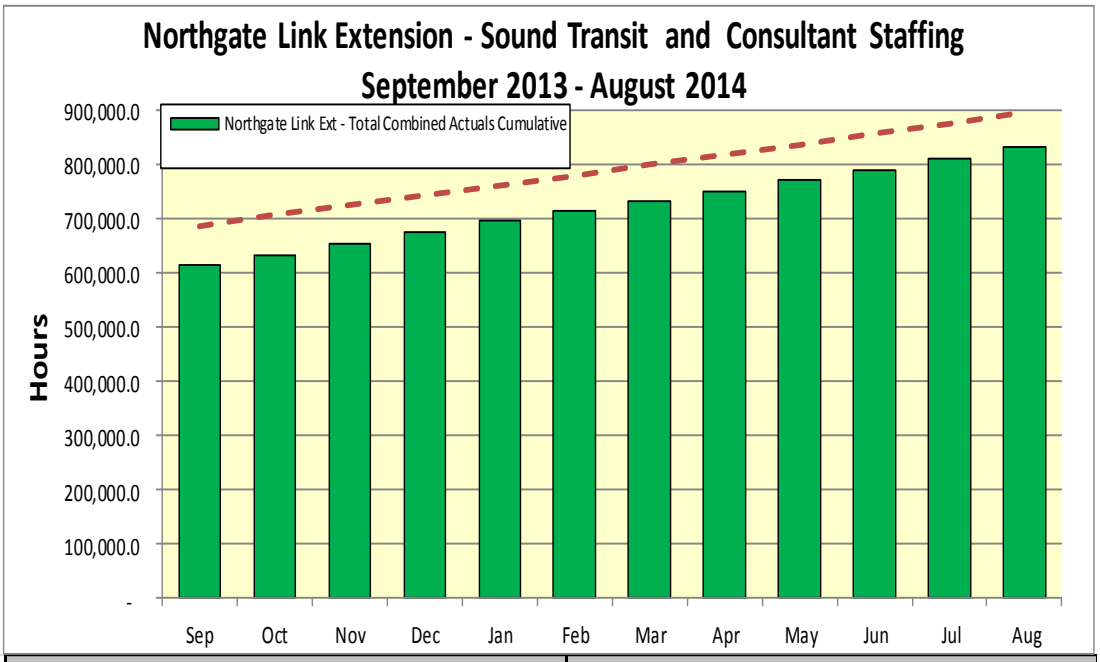



| | PE/EIS | Civil/ Architect | Systems | CM | Total |
|---|---|---|---|---|---|
| Planned Period | - | 1,757.0 | 2,688.0 | 5,760.0 | 10,205.0 |
| Actual Period | - | 1,721.5 | 2,498.5 | 4,317.3 | 8,537.3 |
| Total Planned Cumulative | - | 70,438.0 | 90,096.0 | 319,920.0 | 480,454.0 |
| Total Actual Cumulative | - | 84,182.0 | 41,832.5 | 273,432.1 | 399,446.6 |

## Northgate Link Extension Staffing

Total Internal and External Staffing – Northgate Link Extension

During August, 35 internal and 97.8 consultant FTE were assigned to the Northgate Link Extension. This is a 1% (1.4 FTE) increase from July and 11% (13.1 FTE) above plan. Year-to-date average internal and consultant staffing is 4% (4.4 FTE/mo.) above plan; cumulatively since January 2011 average monthly staffing is trending 7% (8.7 FTE/mo.) below plan.

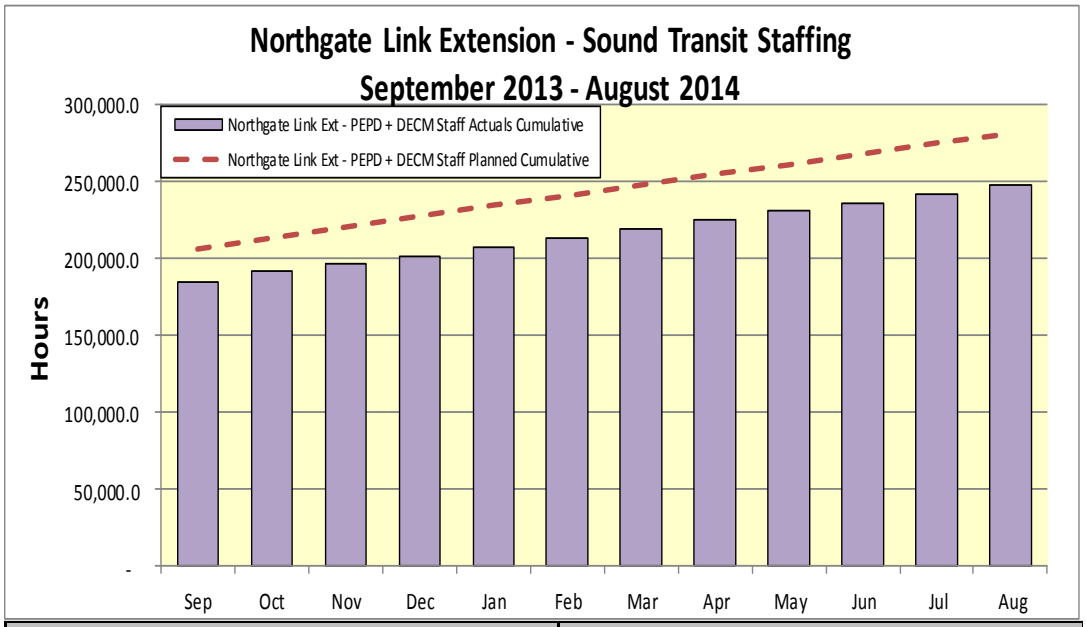



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 896,081.7 | 834,842.2 | -61,239.5 | 93.2% | 19,152.0 | 21,245.0 | 2,093.0 | 110.9% |
| Monthly Average | 20,365.5 | 18,973.7 | -1,391.8 | | | | | |
| Monthly FTE | 127.3 | 118.6 | -8.7 | | 119.7 | 132.8 | 13.1 | |

## Northgate Link Extension Staffing

Internal Resource Commitments to Northgate Link Extension

Internal staffing in August (35 FTE) decreased 13% (5 FTE) from July and was 17% (7.1 FTE) below plan. Year-to-date internal staffing remained 13% (5.6 FTE/mo.) below plan; cumulatively, since January 2011, average monthly internal staffing continues to trend nearly 12% (4.8 FTE/mo.) below plan.

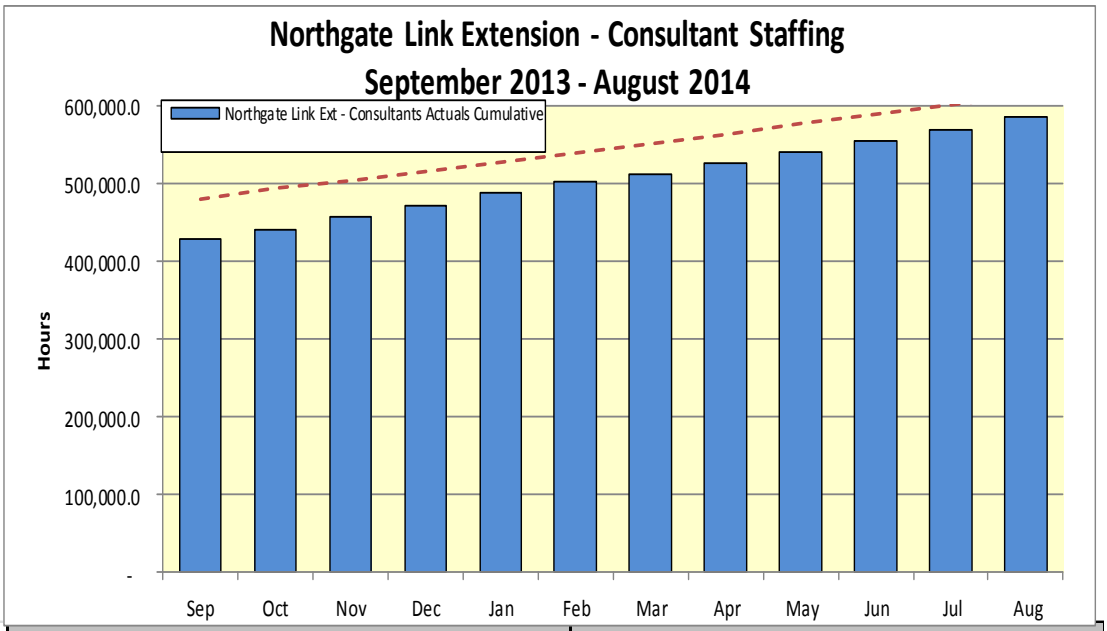



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 281,648.0 | 248,168.5 | -33,479.5 | 88.1% | 6,736.0 | 5,598.5 | -1,137.5 | 83.1% |
| Monthly Average | 6,401.1 | 5,640.2 | -760.9 | | | | | |
| Monthly FTE | 40.0 | 35.3 | -4.8 | | 42.1 | 35.0 | -7.1 | |

## Northgate Link Extension Staffing

Consultant Resource Commitments to Northgate Link Extension

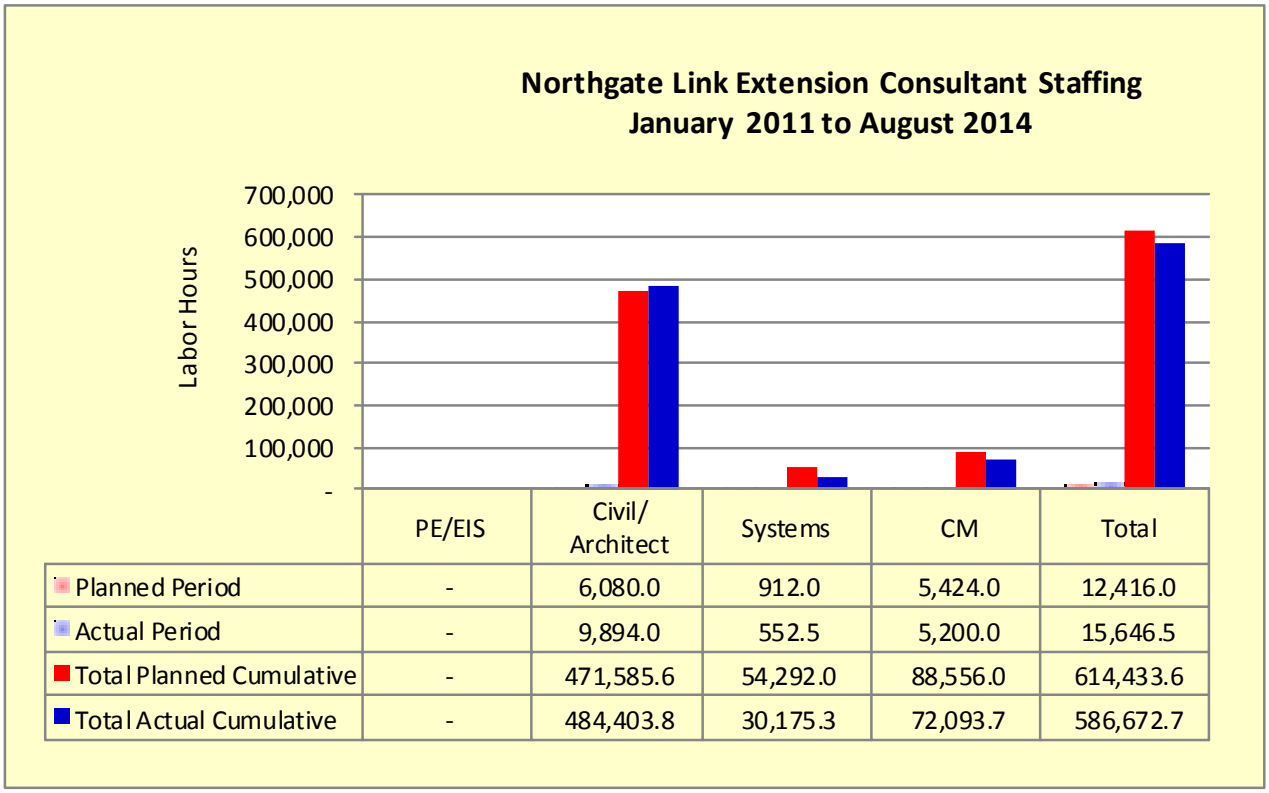
In August, 97.8 consultant FTE were assigned to the Northgate Link Extension; consultant staffing was above plan by 26% (20.2 FTE) an increase of 7% (6.4 FTE) from July reporting. Year-to-date, consultant staffing is 13% (10 FTE/ mo.) above plan; cumulatively, since January 2011, average consultant utilization is trending approximately 5% (4 FTE/mo.) below plan.




| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 614,433.7 | 586,673.7 | -27,760.0 | 95.5% | 12,416.0 | 15,646.5 | 3,230.5 | 126.0% |
| Monthly Average | 13,964.4 | 13,333.5 | -630.9 | | | | | |
| Monthly FTE | 87.3 | 83.3 | -3.9 | | 77.6 | 97.8 | 20.2 | |

## Northgate Link Extension Staffing

Consultant Resource Commitments to Northgate Link Extension




| | PE/EIS | Civil/ Architect | Systems | CM | Total |
|---|---|---|---|---|---|
| Planned Period | - | 6,080.0 | 912.0 | 5,424.0 | 12,416.0 |
| Actual Period | - | 9,894.0 | 552.5 | 5,200.0 | 15,646.5 |
| Total Planned Cumulative | - | 471,585.6 | 54,292.0 | 88,556.0 | 614,433.6 |
| Total Actual Cumulative | - | 484,403.8 | 30,175.3 | 72,093.7 | 586,672.7 |

Consultant utilization by discipline follows:

- Civil/architecture consultant utilization for August (61.8 FTE) increased 24% (11.8 FTE) and remained 63% (23.8 FTE) above plan. Cumulatively since January 2011, civil engineering/architecture consultant staffing of 68.8 FTE/mo. is 3% (1.8 FTE/mo.) above plan.

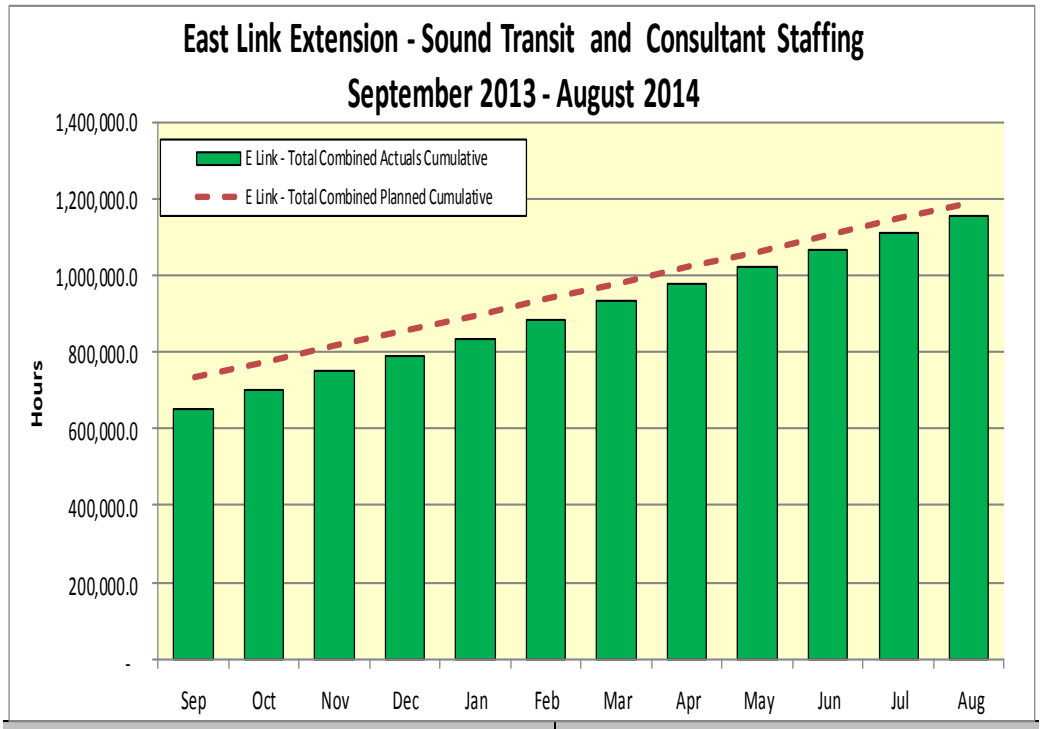
- Systems consultant utilization (3.9 FTE) was consistent with July staffing and remained 39% (2.2 FTE) below plan. Since January 2011, average monthly Systems consultant staffing continues to trends 94% (4.3 FTE/mo.) below plan.

- CM consultant staffing in August (32.5 FTE) decreased 13% (5 FTE) from July and was 4% (1.4 FTE) below plan. Cumulatively, since January 2011, average monthly CM consultant staffing is trending 17% (2.11 FTE/mo.) below plan.

## East Link Extension Staffing

Total Internal and External Staffing – East ink Extension

Staffing for the East Link Extension in August (274 FTE) increased 8% (19.8 FTE) from July and was 6% (14.4 FTE) above plan. Year-to-date internal and consultant staffing continues to trend at 9% (22.2 FTE/mo.) above plan; cumulatively since January 2011, average monthly staffing continues to trend 3% (5 FTE/mo.) below plan.

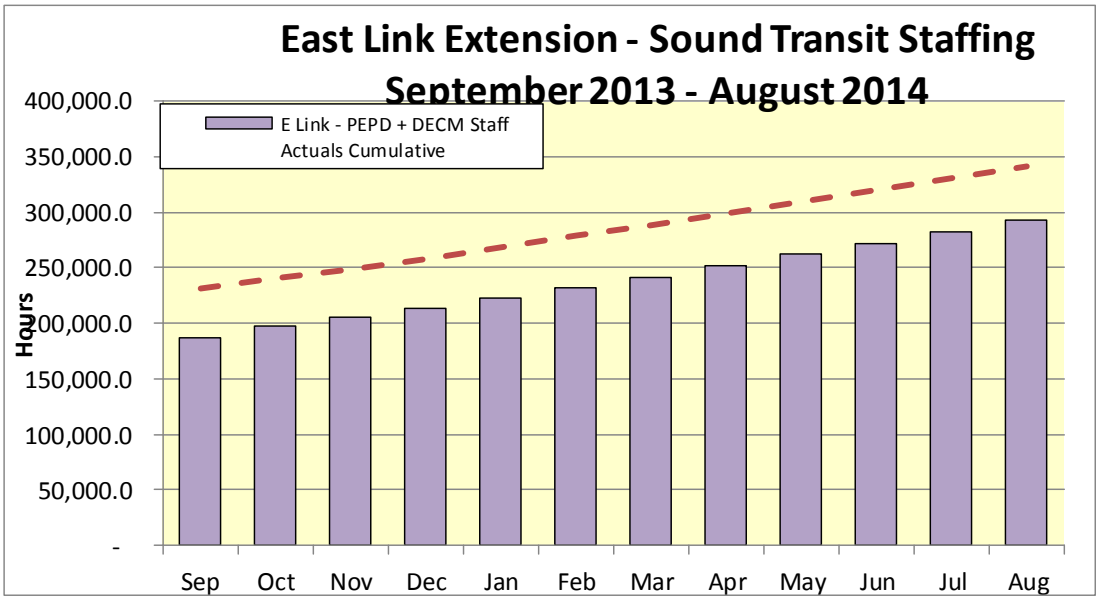



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 1,187,918.4 | 1,152,658.8 | -35,259.6 | 97.0% | 41,552.0 | 43,855.3 | 2,303.3 | 105.5% |
| Monthly Average | 26,998.1 | 26,196.8 | -801.4 | | | | | |
| Monthly FTE | 168.7 | 163.7 | -5.0 | | 259.7 | 274.1 | 14.4 | |

## East Link Extension Staffing

Internal Resource Commitments to East Link Extension

During August, internal staffing for the East Link Extension (66.2 FTE) decreased 3% (1.9 FTE) from July and was 1% (0.9 FTE) above plan. Year-to-date average internal staffing (62.9 FTE/mo.) is 4% (2.5 FTE/mo.) below plan; cumulatively, since January 2011, average monthly internal staffing is trending nearly 15% (7.0 FTE/mo.) below plan.

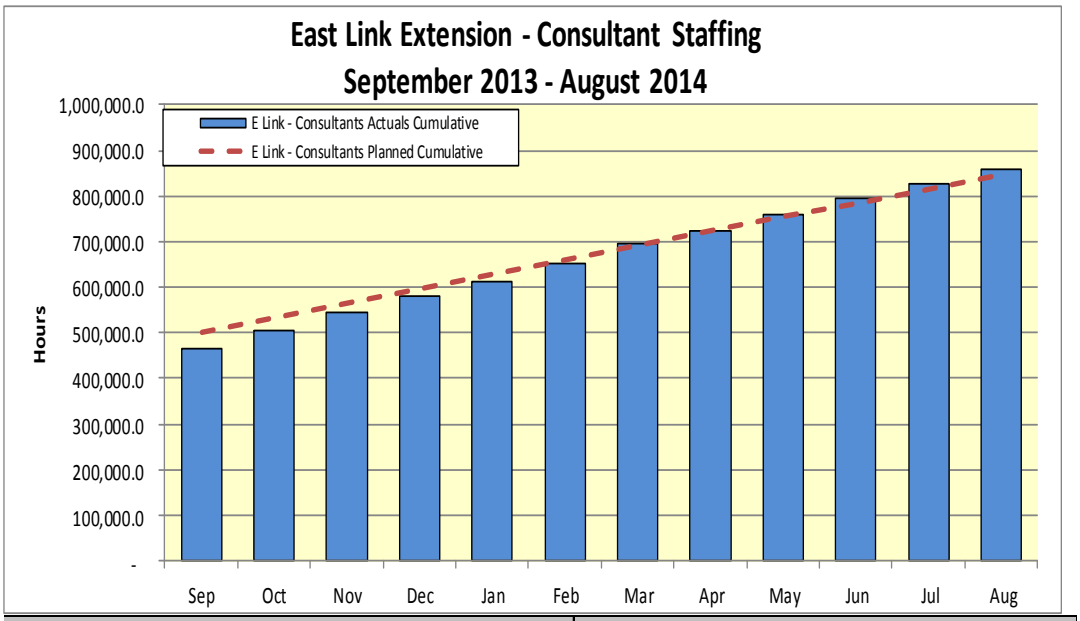



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 341,152.0 | 293,372.5 | -47,779.5 | 86.0% | 10,448.0 | 10,589.9 | 141.9 | 101.4% |
| Monthly Average | 7,753.5 | 6,667.6 | -1,085.9 | | | | | |
| Monthly FTE | 48.5 | 41.7 | -6.8 | | 65.3 | 66.2 | 0.9 | |

## East Link Extension Staffing

Consultant Resource Commitments to East Link Extension

There were 207.9 consultant FTE assigned to the East Link Extension during August. Consultant staffing increased 10% (21.8 FTE) from July and was 7% (13.5 FTE) above plan. Year-to-date average consultant staffing (219 FTE/mo.) is 14% (24.7 FTE/mo.) above plan; cumulatively since January 2011, average monthly consultant staffing is trending 1.5% (1.8 FTE/mo.) above plan.

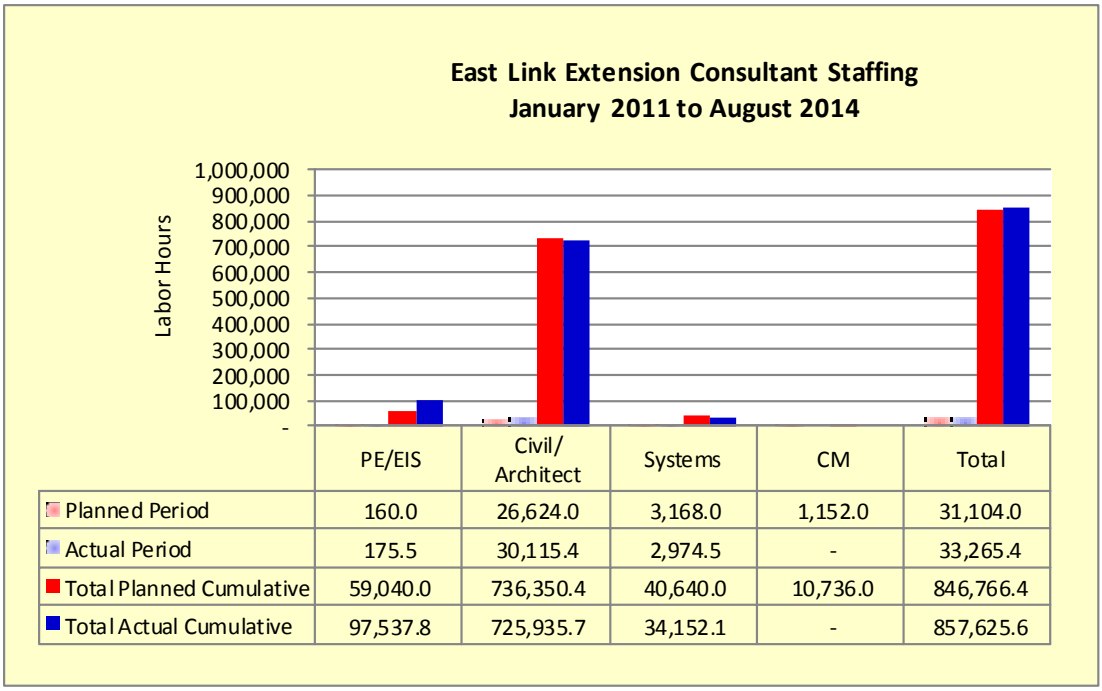



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 846,766.4 | 859,286.4 | 12,520.0 | 101.5% | 31,104.0 | 33,265.4 | 2,161.4 | 106.9% |
| Monthly Average | 19,244.7 | 19,529.2 | 284.5 | | | | | |
| Monthly FTE | 120.3 | 122.1 | 1.8 | | 194.4 | 207.9 | 13.5 | |

## East Link Staffing

Consultant Resource Commitments to East Link, continued

Similar to previous reporting periods, in August, civil engineering consultant staff (188.2 FTE) represented the majority (90%) of consultant staffing. Systems (18.4 FTE) and Preliminary Engineering (PE) (1.1 FTE) consultant accounted for remaining East Link Extension consultant staffing for August. Cumulatively since January 2011, PE consultant staffing (13.9 FTE/mo.) remains 65% (5.5 FTE/mo.) above plan; civil engineering consulting (103.4 FTE/mo.) is 1% (1.2 FTE/mo.) below plan and Systems consulting staff (4.9 FTE/mo.) is 16% (0.9 FTE/mo.) below plan.

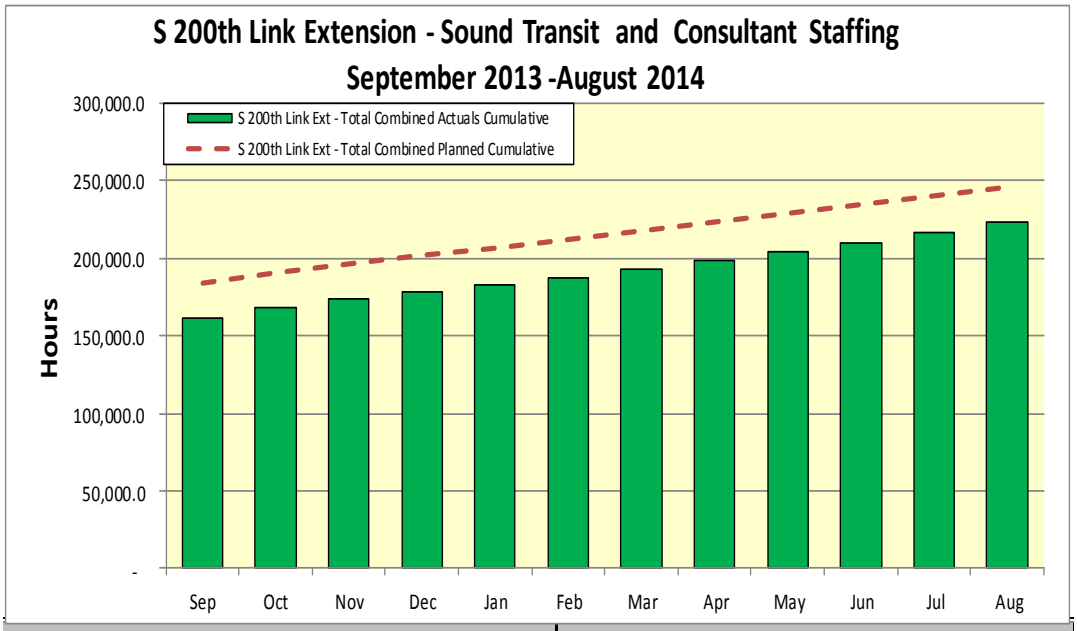



| | PE/EIS | Civil/ Architect | Systems | CM | Total |
|---|---|---|---|---|---|
| Planned Period | 160.0 | 26,624.0 | 3,168.0 | 1,152.0 | 31,104.0 |
| Actual Period | 175.5 | 30,115.4 | 2,974.5 | - | 33,265.4 |
| Total Planned Cumulative | 59,040.0 | 736,350.4 | 40,640.0 | 10,736.0 | 846,766.4 |
| Total Actual Cumulative | 97,537.8 | 725,935.7 | 34,152.1 | - | 857,625.6 |

## S. 200th Link Extension Staffing

Total Internal and External Staffing – S. 200th Link Extension

Staffing for the South 200th Link Extension in August (41.9 FTE) decreased 2% (0.9 FTE) from July staffing and was 12% (4.5 FTE) above plan. Year-to-date consultant and internal staffing is 2% (0.7 FTE/mo.) above plan; since January 2011, average monthly internal and consultant staffing are trending 11% (3.2 FTE/mo.) below plan.

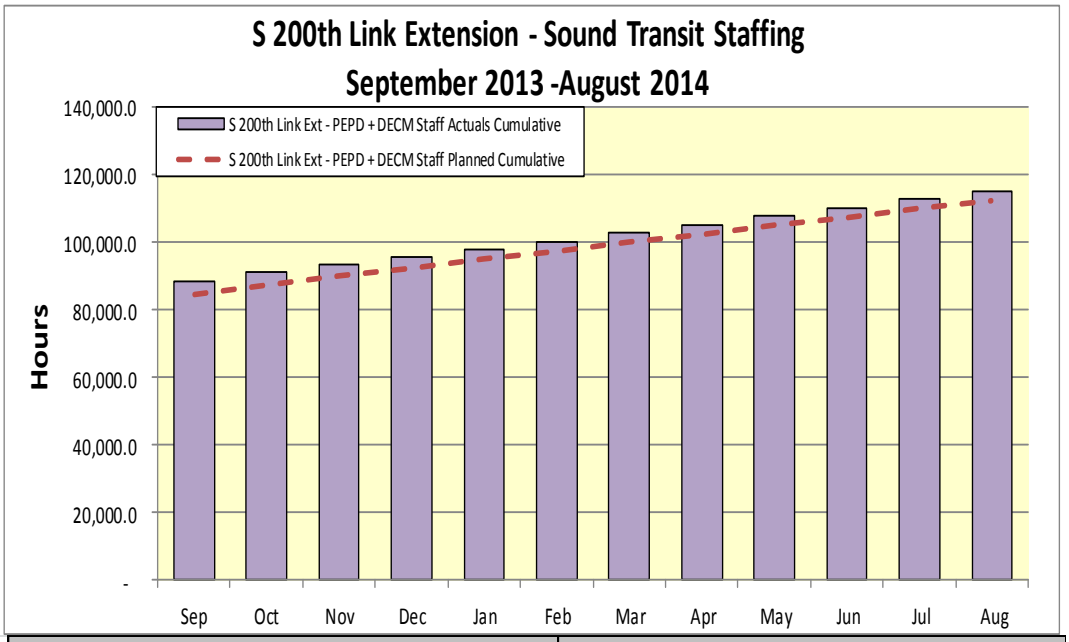



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 246,371.2 | 223,861.9 | -22,509.3 | 90.9% | 5,968.0 | 6,695.4 | 727.4 | 112.2% |
| Monthly Average | 5,599.3 | 5,087.8 | -511.6 | | | | | |
| Monthly FTE | 35.0 | 31.8 | -3.2 | | 37.3 | 41.8 | 4.5 | |

## S. 200th Link Extension Staffing

Internal Resource Commitments South Link to S.200th Link Extension

Internal staffing in August (15.8 FTE) was 11% (2 FTE) below July staffing and 1% (0.2 FTE) above plan. Year-to-date internal staffing remains 2% (0.3 FTE/mo.) below plan; cumulatively, since January 2011, average monthly internal staffing continues to trend 3% (0.4 FTE/mo.) above plan.

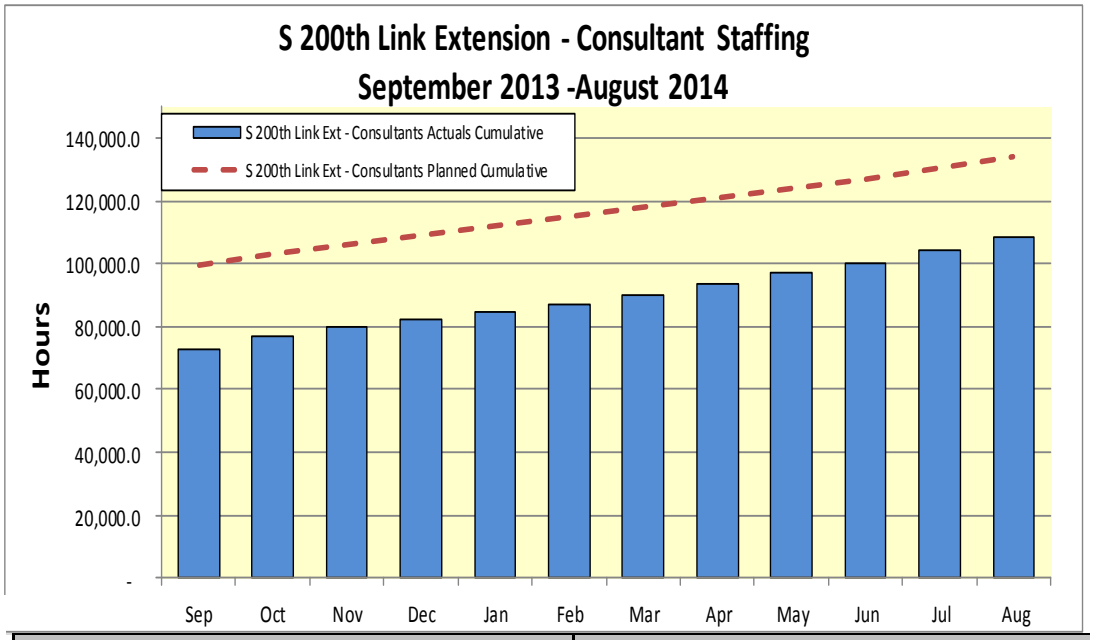



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 112,499.2 | 115,308.5 | 2,809.3 | 102.5% | 2,496.0 | 2,522.9 | 26.9 | 101.1% |
| Monthly Average | 2,556.8 | 2,620.6 | 63.8 | | | | | |
| Monthly FTE | 16.0 | 16.4 | 0.4 | | 15.6 | 15.8 | 0.2 | |

## S. 200th Link Extension Staffing

Consultant Resource Commitments to S. 200th Link Extension

Consultant staffing on the S. 200th Link Extension in August (26.1 FTE) increased 4% (1.7 FTE) from July and was 20% (4.4 FTE) above plan. Year-to-date consultant staffing is 3% (0.5 FTE/mo.) above plan; cumulatively since January 2011, average consultant staffing is trending 20% (3.8 FTE/mo.) below plan.

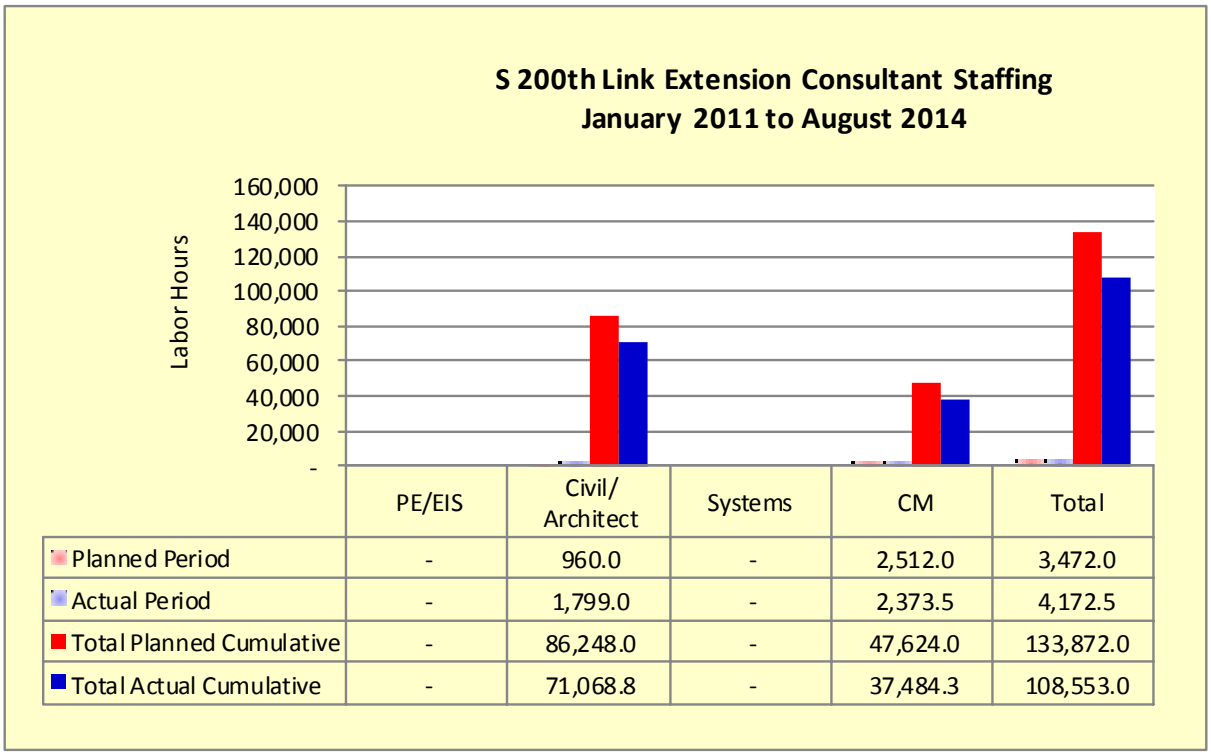



| | Labor Hours Jan 2011 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 133,872.0 | 108,553.4 | -25,318.6 | 81.1% | 3,472.0 | 4,172.5 | 700.5 | 120.2% |
| Monthly Average | 3,042.5 | 2,467.1 | -575.4 | | | | | |
| Monthly FTE | 19.0 | 15.4 | -3.6 | | 21.7 | 26.1 | 4.4 | |

## S. 200th Link Extension Staffing

Consultant Resource Commitments to S. 200th Link Extension

Design/build project management consultants (14.8 FTE) accounted for 56% of consultant staffing in August. Additional consultant staff (11.2 FTE) provided civil and architectural engineering support. Similar to other reporting periods, Systems consultant utilization is not reported as it has been incorporated into the station and guideway design/build contract and is not being tracked or reported separately from design/build consultant staffing.




| | PE/EIS | Civil/ Architect | Systems | CM | Total |
|---|---|---|---|---|---|
| Planned Period | - | 960.0 | - | 2,512.0 | 3,472.0 |
| Actual Period | - | 1,799.0 | - | 2,373.5 | 4,172.5 |
| Total Planned Cumulative | - | 86,248.0 | - | 47,624.0 | 133,872.0 |
| Total Actual Cumulative | - | 71,068.8 | - | 37,484.3 | 108,553.0 |

## Lynnwood Link Staffing

During August, there were 93.6 consultant and internal FTE (171% of plan) assigned to the Lynnwood Link Extension. Internal staffing for August (16.6 FTE) decreased 27% (4.4 FTE) from July and was 24% (3.8 FTE ) below plan. Consultant staffing (81.5 FTE) increased 21% (17.3 FTE) from July and was 110% (42.8 FTE) above plan. All consultant staff asigned to the project are supportng preliminary engineering. Year- to- date average consultant and internal staffing (70.9 FTE/mo.) is 10% above plan. Year- to- date internal staff (12.3 FTE/mo.) is 23% (3.7 FTE/mo.) below plan ;year- to- date consultant staffing (58.5 FTE/mo.) is 51% (19.8 FTE/mo.) above plan. Cumulatively since January 2013, staffing for the Lynnwood Link Extension is trending 2.5 FTE/mo. (5.2% ) below plan.

| | Labor Hours Jan 2013 - Aug 2014 | | | | Current Period Aug 2014 | | | |
|---|---|---|---|---|---|---|---|---|
| | Total Planned | Total Actual | Total Variance | Percent Expended | Period Planned | Period Actual | Period Variance | Percent Expended |
| No. of Hours | 152,000.0 | 144,021.6 | -7,978.4 | 94.8% | 8,752.0 | 14,980.7 | 6,228.7 | 171.2% |
| Monthly Average | 7,600.0 | 7,201.1 | -398.9 | | | | | |
| Monthly FTE | 47.5 | 45.0 | -2.5 | | 54.7 | 93.6 | 38.9 | |

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**ACRONYMS**

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| AA | Alternative Analysis |
| APE | Area of Potential Impact |
| BCE | Baseline Cost Estimate |
| BCWS | Budgeted Cost of Work |
| BIM | Building Information Modeling |
| BNSF | Burlington Northern Santa Fe Railway |
| CCB | Change Control Board |
| CDF | Controlled Density Fill |
| CHS | Capitol Hill Station |
| CM | Construction Management |
| CMU | Concrete Masonry Unit |
| CO | Change Order |
| CPI | Cost Performance Index |
| CPM | Critical Path Method |
| DAHP | Department of Archaeology & History Preservation |
| DART | Days Away, Restricted or Modified |
| DB | Design -Build |
| DECM | Design, Engineering and Construction Management |
| DEIS | Draft Environmental Impact Statement |
| DPD | Seattle Department of Planning and Development |
| DSC | Differing Site Conditions |
| DSDC | Design Support During Construction |
| DSTT | Downtown Seattle Transit Tunnel |
| EFC | Estimated Final Cost |
| EMI | Electro Magnetic Interference |
| FD | Final Design |
| FHWA | Federal Highway Administration |
| FSEIS | Final Supplemental Environmental Impact Statement |
| FFGA | Full Funding Grant Agreement |
| FTA | Federal Transit Administration |
| FTE | Full Time Employee |
| GC/CM | General Contractor /Construction Management |
| HVAC | Heating, Ventilation and Air Conditioning |
| ICD | Integration Control Document |
| IRT | Independent Review Team |
| IWP | Industrial Waste Permit |
| JA | Jacobs Associates |
| JARPA | Joint Aquatic Resource Permit Application |
| KCM | King County Metro |
| LNTP | Limited Notice to Proceed |

ACRONYMS, continued

| | |
|---|---|
| LRRP | Light Rail Review Panel |
| LRT | Light Rail Transit |
| LRV | Light Rail Vehicle |
| LTK | LTK Engineering Services |
| MACC | Maximum Allowable Construction Cost |
| MDA | Major Discharge Authorization |
| MLK | Martin Luther King, Jr. Way |
| MOA | Memorandum of Agreement |
| MOS | Minimum Operable Segment |
| MOU | Memorandum of Understanding |
| MPPCV | Major Public Project Construction Variance |
| MRB | Material Review Board |
| MTP | Montlake Triangle Project |
| MUP | Master Use Permit |
| NB | Northbound |
| NCTP | North Corridor Transit Partners |
| NEPA | National Environmental Policy Act |
| NOAA | National Oceanic and Atmospheric Administration |
| NTP | Notice to Proceed |
| OCS | Overhead Catenary System |
| OMF | Operations and Maintenance Facility |
| OMSF | Operations and Maintenance Satellite Facility |
| OTC | Overlake Transit Center |
| PE | Preliminary Engineering |
| PEP | Project Execution Plan |
| PEPD | Planning, Environment and Project Development |
| PMOC | Project Management Oversight Consultant |
| PSST | Pine Street Stub Tunnel |
| QA | Quality Assurance |
| QC | Quality Control |
| QTR | Quarter |
| RE | Resident Engineer |
| RFC | Request for Change |
| RFD | Request for Deviation |
| RFI | Request for Information |
| RFP | Request for Proposal |
| RFQ | Request for Qualifications |
| RIR | Recordable Injury Rates |

ACRONYMS, continued

| | |
|---|---|
| RMP | Risk Management Plan |
| ROD | Record of Decision |
| ROW | Right of Way |
| SB | Southbound |
| SCADA | Supervisory Central and Data Acquisition |
| SCC | Standard Cost Categories |
| SCL | Seattle City Light |
| SDEIS | Supplemental Draft Environmental Impact Statement |
| SEPA | State Environmental Policy Act |
| SIP | Street Improvement Permitting |
| SPI | Schedule Performance Index |
| SR | State Route |
| ST | Sound Transit |
| START | Seattle Tunnel and Rail Team |
| SWI | Stacy & Witbeck, Inc. |
| TBM | Tunnel Boring Machine |
| TCE | Temporary Construction Easement |
| TE | Traction Electrification |
| TFK | Traylor Frontier Kemper Joint Venture |
| TOD | Transit Oriented Development |
| TVM | Ticket Vending Machine |
| UAC | Unallocated Contingency |
| U-Link | University Link project |
| USFWS | U.S. Fish and Wildlife Service |
| UW | University Of Washington |
| UWS | University of Washington Station |
| VE | Value Engineering |
| VECP | Value Engineering Cost Proposal |
| WBS | Work Breakdown Structure |
| WSDOT | Washington Department of Transportation |